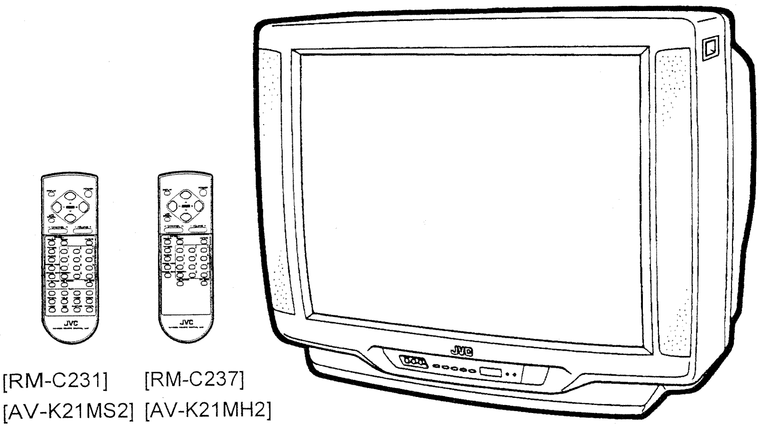
JVC

SERVICE MANUAL

COLOUR TELEVISION

BASIC CHASSIS
CM-M

AV-K21MS2
AV-K21MH2



[RM-C231] [RM-C237]
[AV-K21MS2] [AV-K21MH2]

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No.51411
Jul. 1998

SPECIFICATIONS

Item	Content	
	AV-K21MS2	AV-K21MH2
Dimensions(W × H × D)	60.3cm × 45.4cm × 47.5cm	
Mass	22kg	
TV RF System	CCIR B / G, I, D / K, K1 / M	
Colour System	PAL / SECAM / NTSC 3.58 / NTSC 4.43	
Sound-multiplex System	A2 / NICAM System	
Teletext System	Fastext(United Kingdom System) WST(Standard System)	————
Receiving Frequency		
VHF (VL)	46.25MHz~168.25MHz	
VHF (VH)	175.25MHz~463.25MHz	
UHF	471.25MHz~863.25MHz	
CATV	● Cable TVs of Mid (X-Z, S1-S10) Super (S11-S20) & Hyper (S21-S41) bands receivable	
Intermediate Frequency		
VIF Carrier	38.0MHz	
SIF Carrier	32.5MHz (5.5MHz), 31.5MHz (6.5MHz) 33.5MHz (4.5MHz), 32.0MHz (6.0MHz)	
Colour Sub Carrier Frequency	PAL (4.43MHz), SECAM (4.40625MHz, 4.25MHz) NTSC (3.58MHz, 4.43MHz)	
Aerial Input Terminal	75Ω Unbalanced	
Power Input		
Rated Voltage	AC120~240V, 50 / 60Hz	
Operating Voltage	AC90~260V, 50 / 60Hz	
Power Consumption	125W (Max.) / 88W (Avg.)	
Picture Tube	Visible size : 51cm measured diagonally	
High Voltage	28kV±1kV(at zero beam current)	
Speaker	5cm × 12cm Oval type × 2	
Audio Output	5W + 5W	
S / Video-1,Video-2&3, Input		
Video	1Vp-p, 75Ω	
Audio (L/R)	500mVrms (-4dBs), High impedance	
S-Video	Y : 1Vp-p Positive (negative sync provided, when terminated with 75Ω) C : 0.286Vp-p (burst signal, when terminated with 75Ω)	
Line Out		
Video	1Vp-p, 75Ω	
Audio (L/R)	500mVrms (-4dBs), Low impedance	
Remote Control Unit	RM-C231-1C (Battery size : AA/R06/UM-3 × 2)	RM-C237-1C (Battery size : AA/R06/UM-3 × 2)

Design & specification are subject to change without notice.

SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.

3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.

4. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏚) side GND and EARTH : (⊜) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.

5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).

6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.

7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.

8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

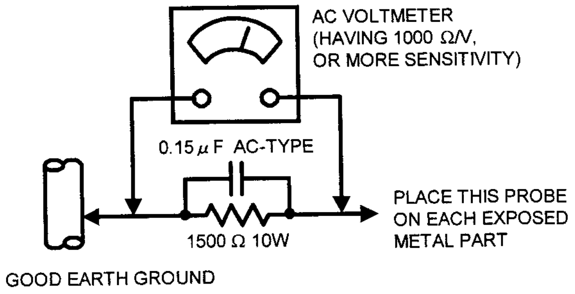
9. **Isolation Check**
   (Safety for Electrical Shock Hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

- **Alternate Check Method**

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



FEATURES

- The TELETEXT SYSTEM has a built-in FASTEXT and WST System. (Only AV-K21MS2)
- New chassis design enables use of an interactive on-screen control.
- Wide range voltage (90V~260V) AC power input.
- With AUDIO / VIDEO INPUT & OUTPUT terminal.
- MUTING button can reduce the audio level to zero instantly.
- Functional remote control to operate TV set (for channel select, volume control, power ON/OFF, etc.) from a distance.
- I^2C bus control utilizes single chip ICs for IF, V/C and VSM.
- By means of AUTO PROGRAM, the TV stations can be selected automatically and the TV channels can also be rearranged automatically.
- Built-in ECO MODE (ECONOMY, ECOLOGY)
  In accordance with the brightness in a room, the brightness and / of contrast of the picture can be adjusted automatically to make the optimum picture which is easy on the eye.
- Built-in ON TIMER & RETURN +.

JVC

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LCT0189-001A-H
0698-T-AB-NV-JMT

AV-K29MS5/AV-K29MS2/AV-K25MS2/AV-K21MS2

JVC

COLOUR TELEVISION

AV-K29MS5
AV-K29MS2
AV-K25MS2
AV-K21MS2

INSTRUCTIONS

Thank you for purchasing this JVC colour television.
To ensure your complete understanding, please read this manual thoroughly before operation.

Contents

Locations 2
Preparation 4
Viewing a Television programme 14
Viewing Images from an External Device 16
Sound and Picture 17
Other Features...................... 20
Viewing a Teletext Programme 26
Teletext Functions 27
Troubleshooting 29
Specifications 30

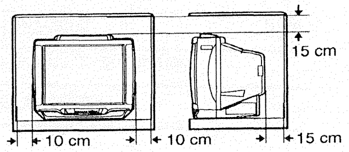
OPERATING INSTRUCTIONS

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:

- TO ENSURE PERSONAL SAFETY, OBSERVE THE FOLLOWING RULES REGARDING THE USE OF THIS TV.
- Operate only from the power source specified on the TV.
- Avoid damaging the power plug and power cord.
- Avoid improper installation and never position this TV where good ventilation is unattainable. When installing this TV distance recommendations must be maintained between the floor and wall, as well as installment in a tightly enclosed area or piece of furniture. Adhere to the minimum distance guidelines shown for safe operation.

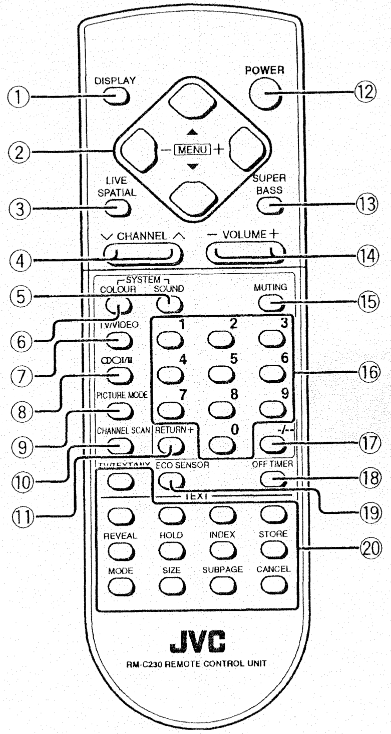


- Do not allow objects or liquid into the cabinet openings.
- In the event of a fault, unplug this TV and call a service technician. Do not attempt to repair it yourself or remove the rear cover.
- When you don't use this TV for a long period of time, be sure to disconnect the power plug from the AC outlet.

AV-K29MH5 AV-K29MH2 AV-K29MS5 AV-K29MS2
AV-K25MH2 AV-K21MH2 AV-K25MS2 AV-K21MS2

Locations

Locations of remote control buttons


DISPLAY
POWER
MENU
LIVE SPATIAL
SUPER BASS
CHANNEL
VOLUME
SYSTEM
COLOUR
SOUND
MUTING
TV/VIDEO
PICTURE MODE
CHANNEL SCAN
RETURN +
-/--
TV/TEXT/MIX
ECO SENSOR
OFF TIMER
TEXT
REVEAL
HOLD
INDEX
STORE
MODE
SIZE
SUBPAGE
CANCEL
JVC
RM-C230 REMOTE CONTROL UNIT
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱
⑲
⑳

① DISPLAY button	p.20
② MENU buttons • MENU ▲/▼ buttons • MENU –/+ buttons	
③ LIVE SPATIAL button	p.18
④ CHANNEL V/Λ buttons	p.14
⑤ SOUND SYSTEM button	p.17
⑥ COLOUR SYSTEM button	p.17
⑦ TV/VIDEO button	p.16
⑧ Multi Sound button	p.17
⑨ PICTURE MODE button	p.18
⑩ CHANNEL SCAN button	p.15
⑪ RETURN + button	p.21
⑫ POWER button	p.7,14,15
⑬ SUPER BASS button (AV-K29MS5 only)	p.18
⑭ VOLUME –/+ buttons	p.15
⑮ MUTING button	p.15
⑯ Number buttons	p.14
⑰ -/-- button	p.14
⑱ OFF TIMER button	p.20
⑲ ECO SENSOR button	p.20
⑳ Teletext buttons	p.26

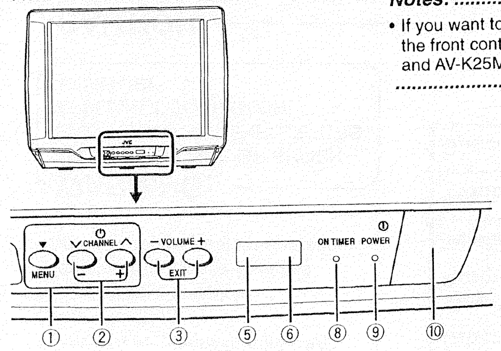
Locations of front panel buttons and lamps

① MENU buttons • MENU button • MENU –/+ buttons	p.25
② CHANNEL V/Λ buttons	p.15
③ VOLUME –/+ buttons	p.15
④ TV/VIDEO button	p.16
⑤ ECO sensor	
⑥ Remote control sensor	
⑦ ECO lamp	p.20
⑧ ON TIMER lamp	p.22
⑨ POWER lamp	p.7,14,15
⑩ Main power button	p.7,14,15

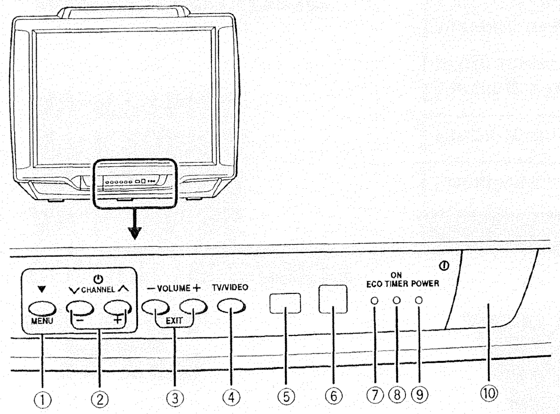
Notes:

- If you want to select the video mode using the front control buttons on AV-K21MS2 and AV-K25MS2, see page 16.

<AV-K21MS2/AV-K25MS2>


MENU
CHANNEL
VOLUME
EXIT
ON TIMER
POWER
①
②
③
⑤
⑥
⑧
⑨
⑩

<AV-K29MS5/AV-K29MS2>


MENU
CHANNEL
VOLUME
TV/VIDEO
EXIT
ECO
ON TIMER
POWER
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩

1. Connecting the aerial and external devices

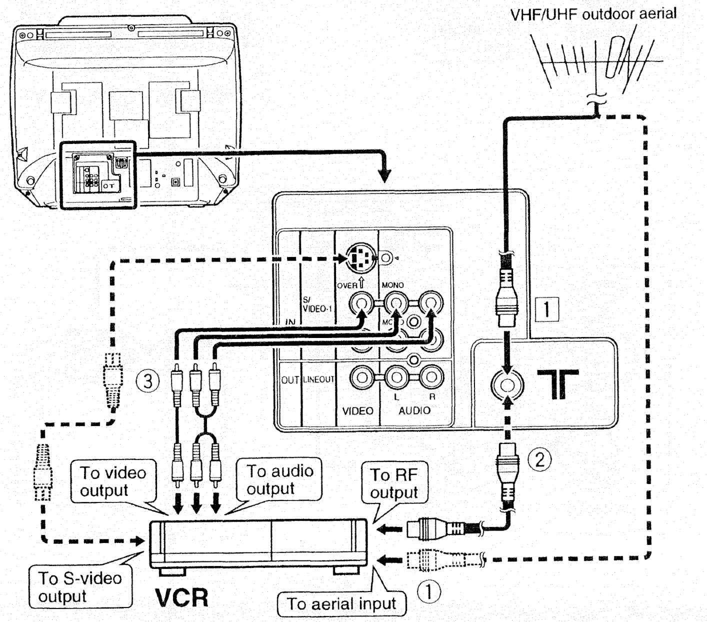
Notes:

- For further details, refer to the manuals provided with the devices you are connecting.
- Connecting cables are not supplied.
- When connecting monaural audio to the TV, use the L/MONO jack.
- The sound and picture that you are watching are output from LINE OUT jacks on the rear panel.

■ Connecting the aerial and VCR

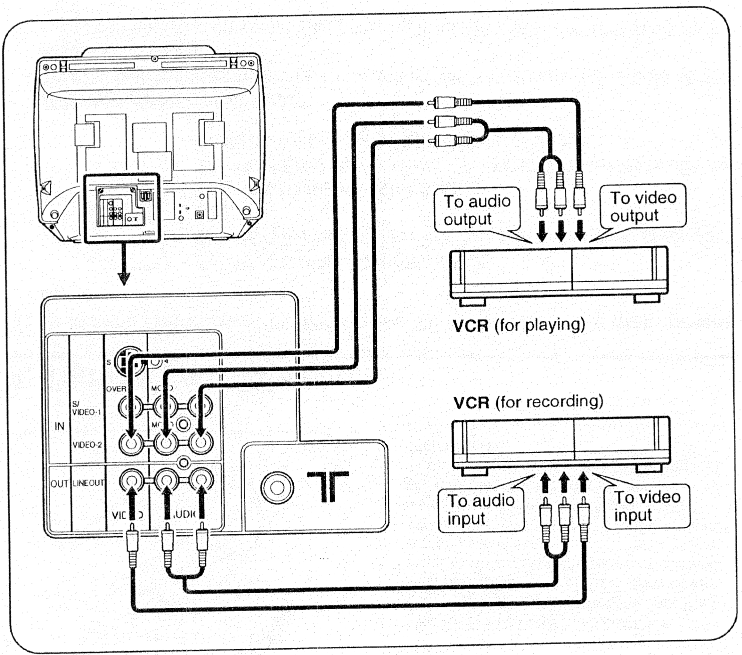
If not connecting a VCR (video cassette recorder), do $\boxed{1}$.
If connecting a VCR, proceed ① → ② → ③.

- You can view images from the VCR without doing ③. For details, see "To view images from a VCR connected to the TV with only an aerial cable" on page 16.



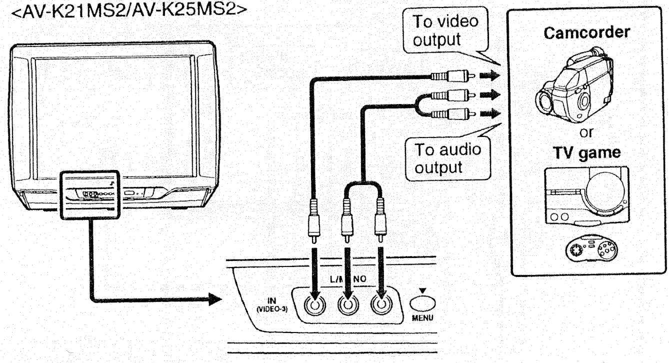
VHF/UHF outdoor aerial
S/VIDEO-1
OVER
MONO
IN
OUT
LINEOUT
VIDEO
AUDIO
L
R
1
2
3
To video output
To audio output
To RF output
To S-video output
VCR
To aerial input
①

■ Connecting other external devices

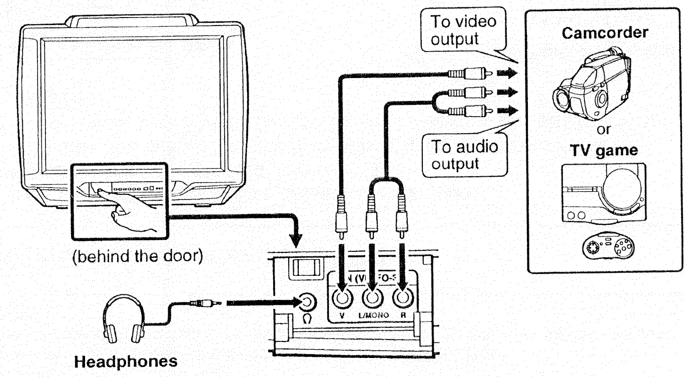


To audio output
To video output
VCR (for playing)
VCR (for recording)
To audio input
To video input
S/VIDEO-1
VIDEO-2
IN
OUT
LINEOUT

<AV-K21MS2/AV-K25MS2>


To video output
To audio output
Camcorder
or
TV game
L/MONO
IN (VIDEO-3)
MENU

<AV-K29MS5/AV-K29MS2>


To video output
To audio output
Camcorder
or
TV game
(behind the door)
V
L/MONO
R
Headphones

Note:

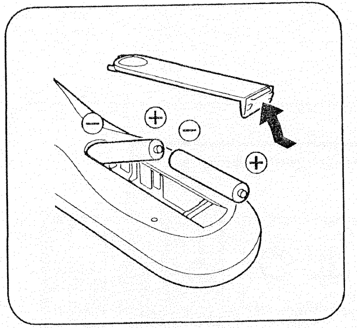
- Use headphones with a stereo mini jack (dia. 3.5 mm). When using headphones, the speaker sound output is disabled.

2. Connecting the power cord

Insert the Power plug into an AC outlet.

3. Inserting batteries into the remote control

Correctly insert two batteries, observing the ⊕ and ⊖ polarities, inserting the ⊖ end first.



CAUTION:

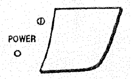
- Follow the cautions printed on the batteries.

Notes:

- Use AA/R6/UM-3 dry cell batteries.
- Battery life is approximately six months to one year depending on frequency of use.
- If the remote control operates erratically, replace the batteries.
- We recommend that you use the supplied batteries initially and replace them as soon as operation becomes erratic.
  The supplied batteries are for testing, not regular use.

4. Turning your TV on

1. Press the Main power button on the TV to turn the TV's main power on.



For AV-K29MS5 and AV-K29MS2:
The POWER lamp lights red (main power on), then green (TV on).
For AV-K21MS2 and AV-K25MS2:
The POWER lamp lights red. The POWER lamp lights dimmer (main power on), then lights brighter (TV on).

If image does not appear:
Your TV is in the standby mode. Press the POWER button on the remote control to turn your TV on.

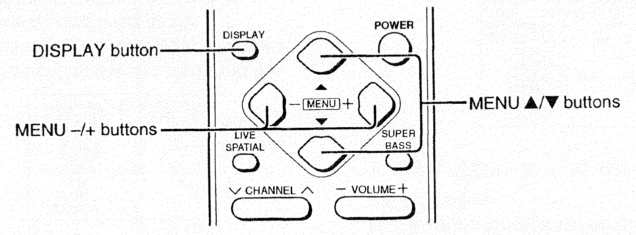
- You can also turn on your TV by pressing the CHANNEL ∨/∧ button on your TV.

To turn your TV off:
Press the POWER button on the remote control. Your TV enters the standby mode.

To turn the TV's main power off:
Press the Main power button on the TV. The POWER lamp goes off.

5. Selecting the on-screen language

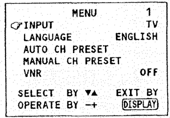
You can select one of three languages for the on-screen display. The displayed menus on the screen are described in the selected language.
In this manual, on-screen descriptions are given in English. Select ENGLISH.



- For details on menu operations using the front control buttons on the TV, see "Menu operations using the front control buttons on the TV" on page 25.

1. Press MENU ▲/▼ to display the following menu.

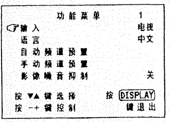
The following menu is displayed in one of three languages.



```
        MENU         1
☞INPUT              TV
 LANGUAGE      ENGLISH
 AUTO CH PRESET
 MANUAL CH PRESET
 VNR               OFF

SELECT  BY ▼▲  EXIT BY
OPERATE BY −+  DISPLAY
```

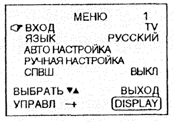
English



```
      功能菜单        1
☞输入              电视
 语言              中文
 自动频道预置
 手动频道预置
 影像噪音抑制        关

按▼▲键选择   按DISPLAY
按−+键控制       键退出
```

Chinese



```
        МЕНЮ         1
☞ВХОД               TV
 ЯЗЫК          РУССКИЙ
 АВТО НАСТРОЙКА
 РУЧНАЯ НАСТРОЙКА
 СПВШ             ВЫКЛ

ВЫБРАТЬ ▼▲       ВЫХОД
УПРАВЛ −+      DISPLAY
```

Russian

Notes: ……

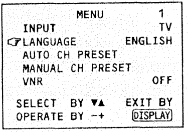
- If a different menu is displayed, repeatedly press the MENU ▲/▼ button until this menu is displayed.
- If the menu appears in English, the TV's on-screen language is already set to English, so you can skip steps 2 and 3.

……

2. Press MENU ▲/▼ to select the second item on the menu.

3. Press MENU –/+ to select ENGLISH .

The menu is displayed in English.



```
        MENU         1
 INPUT              TV
☞LANGUAGE      ENGLISH
 AUTO CH PRESET
 MANUAL CH PRESET
 VNR               OFF

SELECT  BY ▼▲  EXIT BY
OPERATE BY −+  DISPLAY
```

4. Proceed to "6. Presetting TV stations" on the following page.

- If you want to complete operations at this stage, press the DISPLAY button to turn the menu display off.

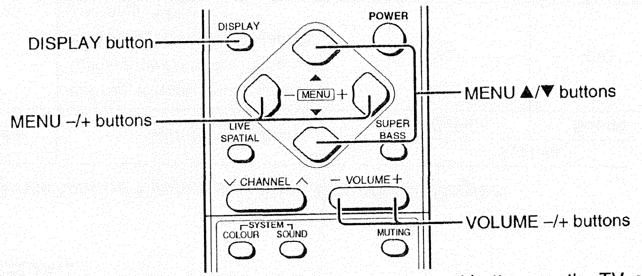
6. Presetting TV stations

To view a TV programme, you must first preset TV stations to channels on the TV.
This TV has 120 channels (channel 1 to 119 and channel AV).
You can choose between two functions, the Auto Channel Preset and Manual Channel Preset and preset TV stations to channels on TV.

Note: ……

- After you have finished presetting, you can set undesired channels to be skipped over (see "Skip" on page 12.

……



- For details on menu operations using the front control buttons on the TV, see "Menu operations using the front control buttons on the TV" on page 25.

■ Auto Channel Preset

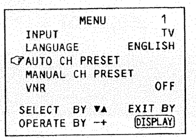
You can automatically preset all TV stations that can be received on your TV to channels in one simple operation.

Notes: ……

- When you use this function, no station is preset to the channel AV. Channel AV is offered for viewing images from a VCR connected to your TV with only an aerial cable. For more details, see "To view images from a VCR connected to the TV with only an aerial cable" on page 16.
- If the Auto Channel Preset does not work well, preset TV stations manually. For details, see "Manual Channel Preset" on page 10.

……

1. Press MENU ▲/▼ to select AUTO CH PRESET in the "MENU 1" menu.



```
        MENU         1
 INPUT              TV
 LANGUAGE      ENGLISH
☞AUTO CH PRESET
 MANUAL CH PRESET
 VNR               OFF

SELECT  BY ▼▲  EXIT BY
OPERATE BY −+  DISPLAY
```

To display this menu:
Repeatedly press MENU ▲/▼ button until it is displayed.

2. Press MENU – /+ to start the Auto Channel Preset function.

" >>> ON SEARCH" is displayed on the screen.

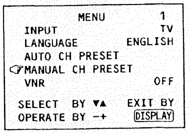
When you have finished presetting all TV channels that can be received on your TV, the display will go out and the Auto Channel Preset function will end.

- To stop the Auto Channel Preset, press the MENU –/+ button.

■ Manual Channel Preset

You can manually preset the desired TV stations to the desired channels.

***1.* Press MENU ▲/▼ to select MANUAL CH PRESET in the "MENU 1" menu.**

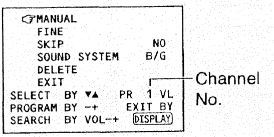


```
            MENU        1
  INPUT                TV
  LANGUAGE        ENGLISH
  AUTO CH PRESET
☞MANUAL CH PRESET
  VNR                 OFF

SELECT  BY ▼▲     EXIT BY
OPERATE BY -+     DISPLAY
```

To display this menu:
Repeatedly press the MENU ▲/▼ button until it is displayed.

***2.* Press MENU –/+.**
The sub-menu is displayed.



```
☞MANUAL
  FINE
  SKIP               NO
  SOUND SYSTEM      B/G
  DELETE
  EXIT
SELECT  BY ▼▲    PR  1 VL
PROGRAM BY -+     EXIT BY
SEARCH  BY VOL-+  DISPLAY
```

- The channel No. is displayed as a PR No. For example, channel 1 will be displayed as PR 1. However, channel AV will be displayed as AV.

***3.* Press MENU –/+ to select the channel No. to be preset.**

***4.* Press VOLUME –/+ to start selection of the TV station.**
" >>> " or " <<< " is displayed on the screen.

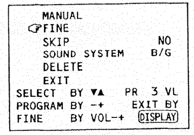
When a TV station is received, the " >>> " or " <<< " display goes out, and the TV station is preset to the currently selected channel No.

- If you have selected the wrong TV station for preset, repeatedly press the VOLUME –/+ button until the desired TV station is selected.
- To stop the Manual Channel Preset, press any button other than the VOLUME –/+ button.

If the picture is not clear:

Use the Fine function to fine-tune the TV station.

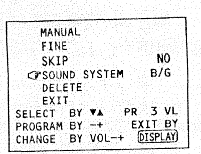
1. **Press MENU ▲/▼ to select FINE.**



```
  MANUAL
☞FINE
  SKIP               NO
  SOUND SYSTEM      B/G
  DELETE
  EXIT
SELECT  BY ▼▲    PR  3 VL
PROGRAM BY -+     EXIT BY
FINE    BY VOL-+  DISPLAY
```

2. **Hold VOLUME –/+ down to fine-tune the TV station so that the best image is displayed on screen.**
" > " or "< " indicates that the TV station is being fine-tuned.

***5.* Press MENU ▲/▼ to select SOUND SYSTEM.**



```
  MANUAL
  FINE
  SKIP               NO
☞SOUND SYSTEM      B/G
  DELETE
  EXIT
SELECT  BY ▼▲    PR  3 VL
PROGRAM BY -+     EXIT BY
CHANGE  BY VOL-+  DISPLAY
```

***6.* Press VOLUME –/+ to select the appropriate sound system.**
- For the sound systems in each country or region, refer to the table "The Broadcasting systems of Each country or Region" below.

***7.* Press MENU ▲/▼ to select MANUAL.**

***8.* Repeat steps 3 to 7 if you want to preset another TV station to a channel.**

***9.* Press DISPLAY to turn the display off.**

The Broadcasting Systems of Each Country or Region

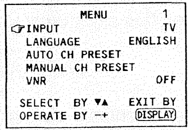
Area	Country or Region	System	
		Colour	Sound
Asia, Middle East	Bahrain, Kuwait, Oman, Qatar, United Arab Emirates, Yemen, etc. Indonesia, Malaysia, Singapore, Thailand, India, etc.	PAL	B/G
	China, Vietnam, etc.	PAL	D/K
	Hong Kong, etc.	PAL	I
	Islamic Republic of Iran, Lebanon, Saudi Arabia, etc.	SECAM	B/G
	Philippine, Taiwan, Myanmar, etc.	NTSC	M
Europe	Russia, etc.	SECAM	D/K
	Czech Republic, Poland, etc.	PAL	D/K
	Germany, Holland, Belgium, etc.	PAL	B/G
	UK, etc.	PAL	I
Oceania	Australia, New Zealand, etc.	PAL	B/G
Africa	Republic of South Africa, etc.	PAL	I
	Nigeria, etc.	PAL	B/G
	Egypt, Morocco, etc.	SECAM	B/G

■ Skip

When selecting channels, you can set undesired channels to be skipped. Channels set to be skipped cannot be selected by the CHANNEL V/Λ buttons nor the CHANNEL SCAN button.

- Channels to which a station has not been preset are automatically set to be skipped.

1. Press MENU ▲/▼ to display the "MENU 1" menu.

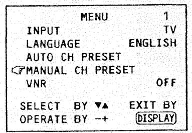


```
            MENU          1
☞INPUT                   TV
  LANGUAGE          ENGLISH
  AUTO CH PRESET
  MANUAL CH PRESET
  VNR                   OFF

 SELECT  BY ▼▲     EXIT BY
 OPERATE BY -+     DISPLAY
```

- If a different menu is displayed, repeatedly press the MENU ▲/▼ button until this menu is displayed.

2. Press MENU ▲/▼ to select MANUAL CH PRESET.

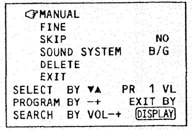


```
            MENU          1
  INPUT                  TV
  LANGUAGE          ENGLISH
  AUTO CH PRESET
☞MANUAL CH PRESET
  VNR                   OFF

 SELECT  BY ▼▲     EXIT BY
 OPERATE BY -+     DISPLAY
```

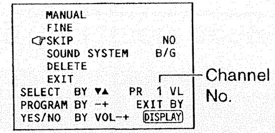
3. Press MENU –/+.

The sub-menu is displayed.



```
  ☞MANUAL
     FINE
     SKIP               NO
     SOUND SYSTEM      B/G
     DELETE
     EXIT
SELECT  BY ▼▲    PR  1 VL
PROGRAM BY -+     EXIT BY
SEARCH  BY VOL-+  DISPLAY
```

4. Press MENU ▲/▼ to select SKIP.



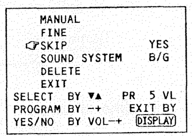
```
     MANUAL
     FINE
   ☞SKIP                NO
     SOUND SYSTEM      B/G
     DELETE
     EXIT
SELECT  BY ▼▲    PR  1 VL
PROGRAM BY -+     EXIT BY
YES/NO  BY VOL-+  DISPLAY
```

- The channel No. is displayed as a PR No. For example, channel 1 will be displayed as PR 1. However, channel AV will be displayed as AV.

5. Press MENU –/+ to select the channel you want to skip.

6. Press VOLUME –/+ to select YES.

The channel you selected is set to be skipped.



```
     MANUAL
     FINE
   ☞SKIP               YES
     SOUND SYSTEM      B/G
     DELETE
     EXIT
SELECT  BY ▼▲    PR  5 VL
PROGRAM BY -+     EXIT BY
YES/NO  BY VOL-+  DISPLAY
```

To cancel the Skip:

select NO.

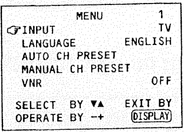
7. Repeat steps 5 and 6 if you want to set another channel to skip.

8. Press DISPLAY to turn the display off.

■ Delete

You can delete a TV station already preset to a channel.

1. Press MENU ▲/▼ to display the "MENU 1" menu.

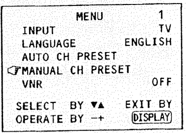


```
            MENU          1
☞INPUT                   TV
  LANGUAGE          ENGLISH
  AUTO CH PRESET
  MANUAL CH PRESET
  VNR                   OFF

 SELECT  BY ▼▲     EXIT BY
 OPERATE BY -+     DISPLAY
```

- If a different menu is displayed, repeatedly press the MENU ▲/▼ button until this menu is displayed.

2. Press MENU ▲/▼ to select MANUAL CH PRESET.

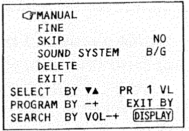


```
            MENU          1
  INPUT                  TV
  LANGUAGE          ENGLISH
  AUTO CH PRESET
☞MANUAL CH PRESET
  VNR                   OFF

 SELECT  BY ▼▲     EXIT BY
 OPERATE BY -+     DISPLAY
```

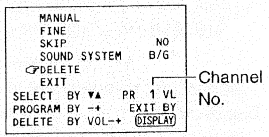
3. Press MENU –/+.

The sub-menu is displayed.



```
  ☞MANUAL
     FINE
     SKIP               NO
     SOUND SYSTEM      B/G
     DELETE
     EXIT
SELECT  BY ▼▲    PR  1 VL
PROGRAM BY -+     EXIT BY
SEARCH  BY VOL-+  DISPLAY
```

4. Press MENU ▲/▼ to select DELETE.



```
     MANUAL
     FINE
     SKIP               NO
     SOUND SYSTEM      B/G
   ☞DELETE
     EXIT
SELECT  BY ▼▲    PR  1 VL
PROGRAM BY -+     EXIT BY
DELETE  BY VOL-+  DISPLAY
```

- The channel No. is displayed as a PR No. For example, channel 1 will be displayed as PR 1. However, channel AV will be displayed as AV.

5. Press MENU –/+ to select a channel of TV station you want to delete.

6. Press VOLUME –/+.

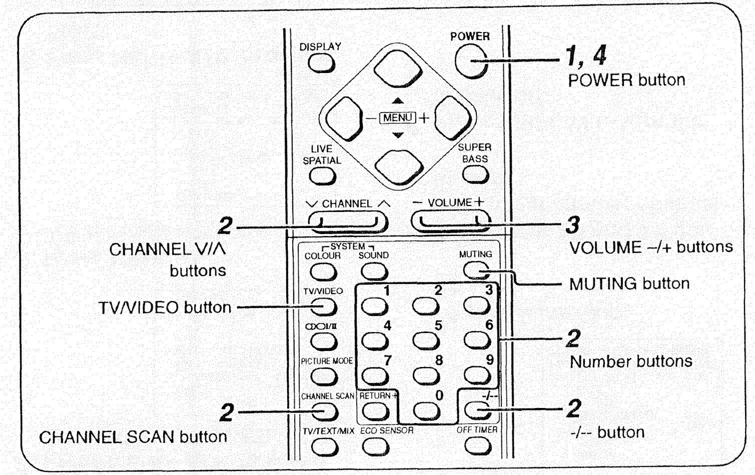
The station preset to that channel is deleted.

- When you delete a station set to a channel, the channel number of every station after it moves forward by one.

7. Repeat steps 5 and 6 if you want to delete another TV station.

8. Press DISPLAY to turn the display off.

Using the remote control


DISPLAY
POWER
MENU
LIVE SPATIAL
SUPER BASS
CHANNEL
VOLUME
SYSTEM
COLOUR
SOUND
MUTING
TV/VIDEO
PICTURE MODE
CHANNEL SCAN
RETURN+
TV/TEXT/MIX
ECO SENSOR
OFF TIMER
1
2
3
4
5
6
7
8
9
0
-/--
1, 4
POWER button
2
CHANNEL V/Λ buttons
TV/VIDEO button
3
VOLUME –/+ buttons
MUTING button
2
Number buttons
2
CHANNEL SCAN button
2
-/-- button

1. Press POWER to turn your TV on.

For AV-K29MS5 and AV-K29MS2:
The POWER lamp changes from red to green.
For AV-K21MS2 and AV-K25MS2:
The POWER lamp lights brighter.

Notes:

- If your TV does not turn on, press the Main power button on the TV then press the POWER button again.
- You can also turn on your TV by pressing any of the following buttons;
  - – the CHANNEL V/Λ button
  - – the Number buttons
  - – the TV/VIDEO button

2. Select a PR channel.

■ Up/ down selection

1. **Press CHANNEL** V/Λ .

■ Direct selection

1. **Repeatedly press the -/-- button to select the desired mode then press the Number buttons.**

- : 1-digit mode
(example)
Channel 6 → Press 6.
Channel AV → Press 0.

- - : 2-digit mode
(example)
Channel 6 → Press 0, 6.
Channel 16 → Press 1, 6.
Channel AV → Press 0, 0.

- - - : 3-digit mode
(example)
Channel 6 → Press 0, 0, 6.
Channel 16 → Press 0, 1, 6.
Channel 116 → Press 1, 1, 6.
Channel AV → Press 0, 0, 0.

■ Channel Scan selection

You can search for the channel you want to view while scanning all of the channels that can be viewed on this TV.

1. **Press CHANNEL SCAN.**
   Channels will be scanned in channel No. order.
2. **When the channel that you want to view appears, press CHANNEL SCAN again before scanning for the next channel begins.**

Note:

- Up/down and Channel Scan selections cannot be selected for channels to which the Skip has been set to YES. (See "Skip" on page 12.)

If the colour is abnormal:

Repeatedly press the COLOUR SYSTEM button to select the appropriate colour system. For details, see "Colour System" on page 17.

3. Press VOLUME –/+ to adjust the sound.

To temporarily render the sound inaudible:

Press the MUTING button.

- To return the sound, press the MUTING button again.

If the sound is abnormal:

Repeatedly press the SOUND SYSTEM button to select the appropriate sound system. For details, see "Sound System" on page 17.

4. To turn your TV off, press POWER.

For AV-K29MS5 and AV-K29MS2:
The POWER lamp changes from green to red.
For AV-K21MS2 and AV-K25MS2:
The POWER lamp lights dimmer.

Note:

- We recommend that you press the Main power button on the TV to turn the main power off if you do not plan to use your TV for a long time or if you wish to save energy.

Using the front panel buttons on the TV

1. Press CHANNEL V/Λ to turn your TV on.

Note:

- If your TV does not turn on, press the Main power button and then press the CHANNEL V/Λ button again.

2. Press CHANNEL V/Λ to select a channel.

3. Press VOLUME –/+ to adjust the sound.

4. To turn your TV off, press the Main power button to turn the main power off.

The POWER lamp goes off.

- If you press the Main power button again, your TV turns on immediately. Step 1 is no longer required.

Viewing Image from an External Device

You can view images from VCRs or other external devices connected to your TV.

1. **Repeatedly press TV/VIDEO to select the VIDEO mode according to the jacks to which the external device you want to view is connected.**

   Each press of the TV/VIDEO button changes the mode as follows.

TV mode | **VIDEO mode**

Channel number or AV → **VIDEO-1 or S/VIDEO-1** → **VIDEO-2** → **VIDEO-3** → **Channel number or AV**

TV mode:

This mode is for viewing TV programmes. Repeatedly press the TV/VIDEO button, or press the CHANNEL V/Λ buttons, or press the number buttons to return to this mode.

When "S/VIDEO-1" is displayed:

The TV shows images from an external device connected to the S terminal.

Note:

- When VCRs or other external devices are connected to both the S terminal and the video input jack of VIDEO-1 terminal, the TV shows images from the VCR or other external devices connected to the S terminal.

To view images from a VCR connected to the TV with only an aerial cable:

Your VCR must be preset to the channel AV of this TV.

Thoroughly read the manual of your VCR, and preset your VCR to the channel AV using the Manual Channel Preset function on page 10.

As a result, you can view images from your VCR when you select the channel AV in the TV mode.

If the colour is abnormal:

Repeatedly press the COLOUR SYSTEM button to select the appropriate colour system. For details, see "Colour System" on page 17.

To select the VIDEO mode using the front control buttons on the TV:

When not using the remote control, you can select the VIDEO mode using the MENU buttons on the TV.

1. **Repeatedly press the MENU button to select INPUT from "MENU 1" menu.**
2. **Repeatedly press the MENU –/+ button to select the VIDEO mode.**

Notes:

- The AV-K29MS5 and AV-K29MS2 have a TV/VIDEO button in the front control buttons on the TV that can be used to select the VIDEO mode.
- For details, see "Menu operations using the front control buttons on the TV" on page 25.

Sound and Picture

Colour System

If the colour is abnormal, select the appropriate colour system. Each press of the COLOUR SYSTEM button changes the colour system as follows.

→ AUTO → PAL → SECAM
NTSC4.43 ← NTSC3.58 ←

AUTO:

Automatic colour system selection

Notes:

- For the colour systems in each country or region, see the table "The Broadcasting Systems of Each Country or Region" on page 11.
- If the colour is abnormal even though you selected AUTO, change the appropriate colour system manually.

Sound System

If the sound is abnormal, select the appropriate sound system. Each press of the SOUND SYSTEM button changes the sound system as follows.

→ B/G → I → D/K → M

Notes:

- For the sound systems in each country or region, see the table "The Broadcasting Systems of Each Country or Region" on page 11.
- You cannot select any sound system when in VIDEO mode.

Multi Sound

You can select the sound system for stereo broadcast programmes and bilingual programmes. To do this, press the Multi Sound button repeatedly to select a sound system.

∞ : Stereo sound
I : Bilingual I (sub I)
II : Bilingual II (sub II)
O : Monaural sound
MONO: Cancels the Multi Sound function, and the sound becomes monaural.

Notes:

- Depending on signal quality the Multi Sound function may not work properly. If the Multi Sound function is not working correctly, and there is unwanted noise in the sound, select MONO to cancel it. once the Multi Sound function has been cancelled even stereo and bilingual programmes will remain in monaural.
- The Multi Sound function has no effect on programmes other than A2 or NICAM broadcast programmes.
- When displaying the current channel number, the current Multi Sound mode appears for approx. 3 seconds.

Picture Mode

You can select one of three picture adjustment modes.
Repeatedly press the PICTURE MODE button to select the desired mode.

BRIGHT:
Heightens contrast and sharpness.

STANDARD:
Standardizes picture adjustments.

SOFT:
Softens contrast and sharpness.

Note: ....

- Pressing the PICTURE MODE button returns all the picture settings in the "MENU 3" menu to their default settings.

....

Super Bass
(AV-K29MS5 only)

You can enjoy a powerful bass sound by using the Super Bass (Super Bass Reflex) function.
Press the SUPER BASS button.
To return to normal sound, press the SUPER BASS button again.

Note: ....

- The AV-K29MS2, AV-K25MS2, and AV-K21MS2 do not have this function.

....

Live Spatial

You can enjoy Surround sound with a "live" effect by using the LIVE SPATIAL (LIVE SPATIAL SURROUND) function.
Repeatedly press the LIVE SPATIAL button to select the desired mode.

LIVE SPATIAL:
Live spatial allows you to enjoy normal stereo sound converting it into surround sound with added depth and ambience.

MONO SPATIAL:
Mono spatial allows you to enjoy normal monaural sound by converting it into a stereo-like sound.

OFF:
Returns to normal sound.

Notes: ....

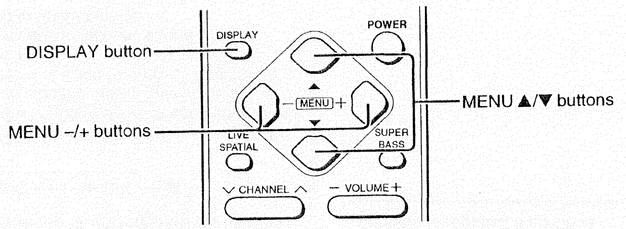
- The LIVE SPATIAL works properly only with stereo sound.
- The MONO SPATIAL works properly only with monaural sound.
- The LIVE SPATIAL mode does not work correctly with headphones.

....

- The LIVE SPATIAL is manufactured under license from Desper Products, Inc.

Picture/Sound Adjustment

You can adjust the picture and sound as you like.

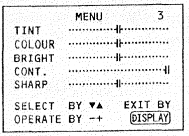


- For details on menu operations using the front control buttons on the TV, see "Menu operations using the front control buttons on the TV" on page 25.

1. **Press MENU ▲/▼ to display a menu.**

2. **Press MENU ▲/▼ repeatedly to display the desired menu.**

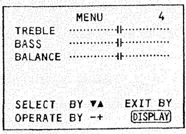
To adjust the picture:
Display the "MENU 3" menu.



```
            MENU          3
TINT     ............||............
COLOUR   ............||............
BRIGHT   ............||............
CONT.    ........................||
SHARP    ............||............

SELECT  BY ▼▲      EXIT BY
OPERATE BY −+      DISPLAY
```

To adjust the sound:
Display the "MENU 4" menu.



```
            MENU          4
TREBLE   ............||............
BASS     ............||............
BALANCE  ............||............

SELECT  BY ▼▲      EXIT BY
OPERATE BY −+      DISPLAY
```

3. **Press MENU ▲/▼ to select an item and press MENU –/+ to adjust it.**

–	Item	+
Reddish	TINT (tint)	Greenish
Lighter	COLOUR (colour depth)	Deeper
Darker	BRIGHT (brightness)	Brighter
Lower	CONT. (contrast)	Higher
Softer	SHARP (sharpness)	Sharper
Lower	TREBLE (high-frequency sound level)	Higher
Lower	BASS (low-frequency sound level)	Higher
Left	BALANCE (left/right speaker balance)	Right

Note: ....

- TINT (tint) is displayed only when viewing images from NTSC3.58 or NTSC4.43 colour systems.

....

4. **Press DISPLAY to turn the display off.**

Display

You can continuously display the current channel number or VIDEO mode on the screen.
Press the DISPLAY button.
To turn the display off, press the DISPLAY button again.

Note: ....
- When selecting a channel or VIDEO mode with no input signal, indication of selected channel or VIDEO mode becomes fixed on the screen.

....

Off Timer

You can set this TV to turn off automatically within a specified period of time.
Repeatedly press the OFF TIMER button to select the period of time.

- You can set the period of time a maximum of 120 minutes in 10 minute increments.
- 1 minute before the Off Timer turns off the TV, "GOOD NIGHT!" displays.

To display the remaining time:

Press the OFF TIMER button once.

To cancel the Off Timer:

Press the OFF TIMER button to return the period of time to 0.

Note: ....
- The Off Timer will not turn off the TV's main power.

....

Eco Sensor

You can adjust this TV so that the screen automatically adjusts to the optimum contrast according to the brightness of your room. This function reduces eye strain and the power consumption of this TV.
Repeatedly press the ECO SENSOR button to select the desired mode.

ECO SENSOR DISPLAY:

The Eco Sensor function will work. In this mode, the heart mark ♥ indicating the brightness of your room is displayed for several seconds each time the brightness changes. The number of heart marks displayed on screen increases as your room becomes darker. Up to six heart marks are displayed.

ECO SENSOR:

The Eco Sensor function will work. However, in this mode, the heart mark ♥ will not be displayed even if the brightness of your room changes.

ECO SENSOR OFF:

The Eco Sensor function will not work.

- If your TV is AV-K29MS5 or AV-K29MS2, the ECO lamp will light when the Eco Sensor function is working.

Return +

By setting a channel to "Return channel", you can return to that channel with one touch.

1. **Press CHANNEL ∨/∧ or the Number buttons to select a channel to set to "Return channel".**
2. **Press RETURN + for more than 3 seconds continuously.**
   "RETURN PLUS PROGRAMMED!" appears.
3. **When viewing another channel, press RETURN +.**
   The channel changes to the channel set for "Return channel".

To cancel the channel set for "Return channel":

Press the RETURN + button for more than 3 seconds continuously.
- "RETURN PLUS CANCELLED!" appears.

Notes: ....
- When you turn the TV off, the "Return channel" setting will be canceled.
- When you press the RETURN + button while viewing the channel set for "Return channel", the channel changes to the previously viewed channel.
- When you press the RETURN + button while in a VIDEO mode, the mode switches to TV mode. To return to the channel set for "Return channel", press the RETURN + button again.

....

When there is no setting for "Return channel":

When you press the RETURN + button, the channel changes to the previously viewed channel.

Demonstration

The demonstration runs automatically and introduces the menus of this TV's main features.

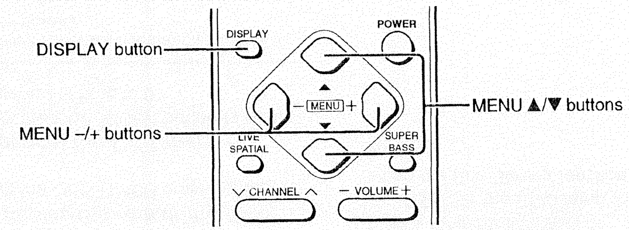
Note: ....
- Starting the demonstration may change some part of each of the current function settings.

....

1. **Press MENU ▲/▼ to display a menu.**
2. **Press the -/-- button.**
   The demonstration bigins.
   - To stop the demonstration, press any button.

When operating with the front control buttons on the TV:

Press the TV's MENU + button and the VOLUME + button at the same time.
- To stop the demonstration, press any button.

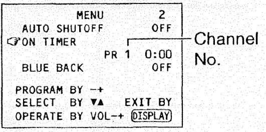


- For details on menu operations using the front control buttons on the TV, see "Menu operations using the front control buttons on the TV" on page 25.

On Timer

Your TV will automatically turn on and tune into the channel you want after a certain period of time you have specified.

1. Repeatedly press MENU ▲/▼ to display the "MENU 2" menu, and Press MENU ▲/▼ to select ON TIMER.



```
          MENU          2
  AUTO SHUTOFF        OFF
☞ON TIMER
              PR 1   0:00
  BLUE BACK           OFF

PROGRAM BY –+
SELECT  BY ▼▲     EXIT BY
OPERATE BY VOL–+  DISPLAY
```

2. Press MENU –/+ to select a channel you want to view when the TV turns on.

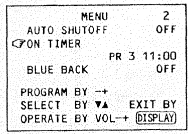
Note:

- You cannot select the channel AV, the VIDEO modes, and the channels for which the Skip is set. (See "Skip" on page 12)

3. Press VOLUME –/+ to select the period of time after which you want to turn on the TV.

The ON TIMER lamp lights and the On Timer starts.

- Each time you press the button, the period of time changes in 15 minute intervals (up to 12 hours).



```
          MENU          2
  AUTO SHUTOFF        OFF
☞ON TIMER
              PR 3  11:00
  BLUE BACK           OFF

PROGRAM BY –+
SELECT  BY ▼▲     EXIT BY
OPERATE BY VOL–+  DISPLAY
```

To cancel the On Timer:

Press the VOLUME –/+ button to return the period of time to "0:00".

4. Press DISPLAY to turn the display off.

5. Press POWER to turn the TV off.

The ON TIMER lamp will stay lit.

Notes:

- If you turn off the TV's main power by pressing the Main power button, the On Timer setting is canceled.
- If you do not turn off the TV after starting the On Timer, once the time set for the On Timer is reached, the channel will automatically switch to the channel set for the On Timer.

While the On Timer is operating:

The ON TIMER lamp lights.

When the time set for the On Timer is reached:

The TV automatically turns on and the channel set for the On Timer is displayed.

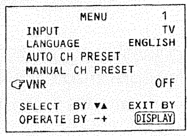
Notes:

- For safety reasons the TV will automatically turn off if no operations are made within approximately two hours after the TV is turned on with the On Timer.
- The Off Timer and Auto Shutoff have priority over the On Timer.

VNR (Video Noise Reduction)

You can reduce the picture noise.

1. Repeatedly press MENU ▲/▼ to display the "MENU 1" menu, and press MENU ▲/▼ to select VNR.



```
          MENU          1
  INPUT                TV
  LANGUAGE        ENGLISH
  AUTO CH PRESET
  MANUAL CH PRESET
☞VNR                  OFF

SELECT  BY ▼▲     EXIT BY
OPERATE BY –+     DISPLAY
```

2. Press MENU –/+ to select "ON" or "OFF."

ON:

Activates the VNR. Select "ON" when viewing a noisy picture.

OFF:

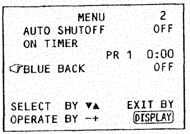
Cancels the VNR.

3. Press DISPLAY to turn the display off.

Blue Back

You can mute the sound and change the picture into a blue screen while no signals come into the TV, or when the input signals are unstable.

1. Repeatedly press MENU ▲/▼ to display the "MENU 2" menu, and press MENU ▲/▼ to select BLUE BACK.



```
          MENU          2
  AUTO SHUTOFF        OFF
  ON TIMER
              PR 1   0:00
☞BLUE BACK            OFF

SELECT  BY ▼▲     EXIT BY
OPERATE BY –+     DISPLAY
```

2. Press MENU –/+ to select "ON" or "OFF."

ON:

Activates the Blue Back.

OFF:

Cancels the Blue Back.

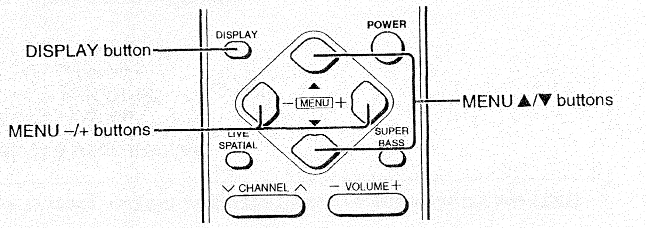
Notes:

- To view a broadcast even when the reception signal is poor, set the Blue Back to OFF.
- Even when the Blue Back is set to OFF, the sound may not be audible.
- The Blue Back function does not operate in VIDEO mode.

3. Press DISPLAY to turn the display off.

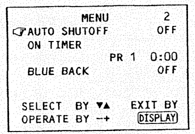
Auto Shutoff

You can set your TV to turn off if no signals are received for about 15 minutes or longer after the end of a broadcast.



- For details on menu operations using the front control buttons on the TV, see "Menu operations using the front control buttons on the TV" on page 25.

1. Press MENU ▲/▼ to display the "MENU 2" menu, and press MENU ▲/▼ to select AUTO SHUTOFF.

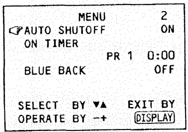


```
           MENU        2
☞AUTO SHUTOFF         OFF
  ON TIMER
                PR 1  0:00
  BLUE BACK           OFF

 SELECT  BY ▼▲    EXIT BY
 OPERATE BY -+    DISPLAY
```

2. Press MENU –/+ to select "ON" or "OFF".

The Auto shutoff function is enabled.



```
           MENU        2
☞AUTO SHUTOFF          ON
  ON TIMER
                PR 1  0:00
  BLUE BACK           OFF

 SELECT  BY ▼▲    EXIT BY
 OPERATE BY -+    DISPLAY
```

ON:

Activates the Auto Shutoff.

OFF:

Cancels the Auto Shutoff.

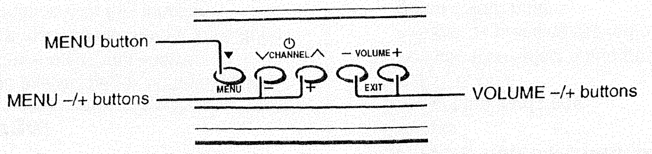
3. Press DISPLAY to turn the display off.

Notes:

- The Auto Shutoff function does not turn off the TV's main power.
- The Auto Shutoff will not work for a VIDEO mode.

Menu operations using the front control buttons on the TV

You can operate functions in menus using the front control buttons on the TV without having to use the remote control.



1. Press MENU to display the menu.

If the desired menu is not displayed:

Repeatedly press the MENU button until the desired menu is displayed.

2. Repeatedly press MENU to select the desired function or item.

To select a function or item above the currently selected function or menu:

Repeatedly press the MENU button to proceed to another menu, and then repeatedly press the MENU button again to return to the original menu. Then select the function or item.

3. Press MENU –/+ or VOLUME –/+ to carry out the desired operation.

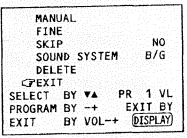
- For details, see the description for the respective function.

4. Press VOLUME –/+ to turn the menu display off.

If the sub-menu is displayed:

The sub-menu cannot be turned off by the VOLUME –/+ button when it is displayed. Follow the procedure below to turn the sub-menu display off.

1. **Press MENU to select EXIT.**



```
     MANUAL
     FINE
     SKIP              NO
     SOUND SYSTEM     B/G
     DELETE
   ☞EXIT
SELECT  BY ▼▲    PR  1 VL
PROGRAM BY -+     EXIT BY
EXIT    BY VOL-+  DISPLAY
```

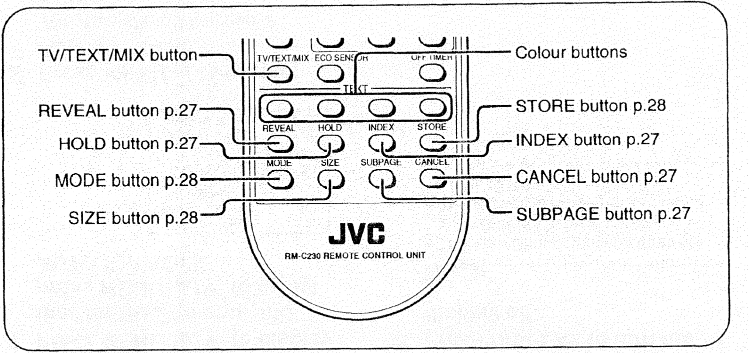
2. **Press VOLUME –/+ to turn the sub-menu display off.**

Viewing a Teletext Programme

You can view two types of teletext programmes: Fastext and WST. Both types of programmes are automatically recognized by your TV.

Note:

- If you have problem concerning a teletext programme, consult your local dealer or television company.


TV/TEXT/MIX button
REVEAL button p.27
HOLD button p.27
MODE button p.28
SIZE button p.28
Colour buttons
STORE button p.28
INDEX button p.27
CANCEL button p.27
SUBPAGE button p.27
TV/TEXT/MIX
ECO SENSOR
OFF TIMER
TEXT
REVEAL
HOLD
INDEX
STORE
MODE
SIZE
SUBPAGE
CANCEL
JVC
RM-C230 REMOTE CONTROL UNIT

1. **Select a channel with teletext information.**

2. **Press TV/TEXT/MIX repeatedly to engage TEXT or MIX mode.**
The mode cycles as follows.

→ TV mode → TEXT mode (TEXT only) → MIX mode (TV and TEXT)

3. **Select a page number.**

To scan pages:
Press the CHANNEL V/Λ button.
Λ : scans forward.
V : scans backward.

To select a page directly:
Enter a 3-digit page number using the number buttons.

To select a page with a Colour button:
Press the Colour button corresponding to the page number or item displayed at the bottom of the screen.

Teletext Functions

Display cancel

You can view a normal TV programme while scanning for a teletext page you wish to view.

1. **Select the page you want to view.**
Scanning starts.

2. **Press CANCEL.**
The TV programme appears.

3. **Press TV/TEXT/MIX when the page number you wish to view appears in the upper left of the screen.**

Page hold

You can hold a page temporarily even as the teletext transmission continues. To do this, press the HOLD button. Pressing the HOLD or INDEX button, or selecting another teletext page will release the hold mode.

Hidden information reveal

Some teletext pages contain hidden information such as answers to questions. You can reveal the hidden information with this function.
To alternate reveal and hide, press the REVEAL button.

Index return

You can easily return to the index page by pressing INDEX.

Fastext/WST:	Returns to teletext page 100 or a page which has been specified.
LIST mode:	Returns to the page number displayed in red in the lower left area of the screen.

Sub page display

Some teletext pages have sub-pages, which scroll automatically. You can store those pages in memory and view them again later on.

1. **Select a teletext page with sub-pages.**

2. **Press SUBPAGE.**
The input position appears at the bottom left of the screen.

3. **Enter the sub-page number using the number buttons.**
Example:
To select the third page,
press 0, 0, 0, 3.

- You can also select a sub-page number by pressing the red or green colour button.

Calling up a stored page (LIST mode)

If you store the number of teletext pages you often view to memory in the LIST mode, you can quickly call up the desired teletext page whenever you like.

Note:

- You can store up to four teletext page numbers in each channel from 1 to 15. You can store up to four Teletext page numbers to other channels as common page numbers regardless of the channel number.

To call up a stored page:

1. **Press MODE to engage LIST mode.**
   Stored page numbers, are displayed at the bottom of the screen.
2. **Press the Colour button corresponding to the teletext page you want to view.**
   - To release LIST mode, press the MODE button again.

To change a stored page number:

1. **Select a channel with a teletext programme.**
2. **Press MODE to engage LIST mode.**
   Stored page numbers are displayed at the bottom of the screen.
3. **Select a page number by pressing the corresponding Colour button.**
4. **Enter the three digit teletext page number using the number buttons.**
5. **To change another page number, repeat steps 3 and 4.**
6. **Press STORE until the page number turns momentarily white.**
   This completes changing the page number.

Display size

You can double the height of the teletext display.
To do this, press the SIZE button repeatedly.
The teletext display changes cyclically.

Troubleshooting

Important: Review all the instructions in this manual.

Problem	Check/Action
Cannot turn TV on	Press the Main power button (see p.7). Insert the power plug in an AC outlet.
No picture nor sound	Press the TV/VIDEO button to select the correct mode (see p.16). Check the aerial connections.
Remote control inoperable	Replace the batteries (see p.7).
The TV turns on suddenly.	The TV will automatically turn on when the On Timer is operated (see p.22).
The TV turns off suddenly.	The TV will automatically turn off in the following cases. • When the Off Timer or Auto Shutoff is operated (see p.20 and p.24). • When no operations are made within approximately two hours after the TV was turned on with the On Timer (see p.22).
Abnormal sound	Select the appropriate sound system (see p.17).
Abnormal colour	Adjust the colour and brightness (see p.19). Select the appropriate colour system (see p.17). Set the Picture mode to STANDARD (see p.18).
Lines or streaks in picture (interference)	Move the components apart until the interference disappears. Reposition the aerial.
Spotted picture (crosstalk)	Move the aerial away from the source of interference. Replace the aerial cable with a coaxial cable, which is less prone to interference.
Double picture (ghost)	Reposition the aerial. Replace with an aerial with good directionality.
Snowy picture (image noise)	Check the aerial connection and aim it correctly. Replace or repair the aerial.
The TV channel changes suddenly.	The channel will automatically be changed when the On Timer operates (see p.22).
The screen turns blue.	Is the Blue Back set to ON (see p.23) ?
No receivable teletext programme	Select a channel with teletext information. You cannot watch teletext recorded on a video tape.

The following are normal occurrences and are not the result of TV malfunctions:

- When you touch the CRT surface, you might feel a slight charge of static electricity. This is because the CRT contains static electricity; it does not affect the human body.
- Your TV may emit a crackling sound due to a sudden change in temperature. There is no problem unless the picture or sound is abnormal.
- When a still bright image (of a white dress, for example) appears on the screen, the image may be coloured. This problem occurs in all CRTs, and when the bright image disappears, the colouration also disappears.
- This TV is equipped with a microcomputer that may operate abnormally due to interference from external devices. If this happens, press the Main power button to turn the main power off and disconnect the power plug from the AC outlet. Then, reconnect the power plug to the AC outlet and press the Main power button again.

Specifications

Model	AV-K29MS5	AV-K29MS2
TV RF systems	B, G, I, D, K, K1, M	
Colour systems	PAL, SECAM, NTSC 3.58 / 4.43 MHz	
Channel and frequencies	VHF low channel (VL) = 46.25 to 168.25 MHz VHF high channel (VH) = 175.25 to 463.25 MHz UHF channel (U) = 471.25 to 863.25 MHz ■ Receives cable channels in mid band (X to Z, S1 to S10), super band (S11 to S20) and hyper band (S21 to S41) .	
Sound-multiplex system	A2 / NICAM system	
Teletext system	Fastext (United Kingdom system), WST (Standard system)	
Languages displayed by teletext	English, German, Estonian, Lithuanian, Russian, Czechoslovakian, Ukrainian	
Power input	AC120 to 240 V, 50 / 60 Hz (operating AC 90 to 260 V, 50 / 60 Hz)	
Power consumption	Maximum 185 W, Average 120 W	Maximum 180 W, Average 120 W
Screen size (measured diagonally)	Picture tube 73 cm Visible area 68 cm	
Audio output (Rated power output)	15W + 15W	10W + 10W
Speakers	10 cm round × 2 3.5 cm round × 2	10 cm round × 2
External input / output	S/VIDEO-1: S-video input (4 pin mini DIN) VIDEO input (RCA) AUDIO L / R input (RCA)	
	VIDEO-2, VIDEO-3: VIDEO input (RCA) AUDIO L / R input (RCA)	
	LINE OUT: VIDEO output (RCA) AUDIO L / R output (RCA)	
	Headphone jack: stereo mini jack (dia. 3.5 mm)	
Dimensions (W × H × D)	734 mm × 605 mm × 521 mm	734 mm × 583 mm × 521 mm
Weight	42 kg	40 kg
Accessories	• Remote control unit: RM-C230 × 1 • AA / R06 / UM-3 dry cell battery × 2	• Remote control unit: RM-C231 × 1 • AA / R06 / UM-3 dry cell battery × 2

Design and specifications subject to change without notice.

Specifications

Model	AV-K21MS2	AV-K25MS2
TV RF systems	B, G, I, D, K, K1, M	
Colour systems	PAL, SECAM, NTSC 3.58 / 4.43 MHz	
Channel and frequencies	VHF low channel (VL) = 46.25 to 168.25 MHz VHF high channel (VH) = 175.25 to 463.25 MHz UHF channel (U) = 471.25 to 863.25 MHz ■ Receives cable channels in mid band (X to Z, S1 to S10), super band (S11 to S20) and hyper band (S21 to S41) .	
Sound-multiplex system	A2 / NICAM system	
Teletext system	Fastext (United Kingdom system), WST (Standard system)	
Languages displayed by teletext	English, German, Estonian, Lithuanian, Russian, Czechoslovakian, Ukrainian	
Power input	AC120 to 240 V, 50 / 60 Hz (operating AC 90 to 260 V, 50 / 60 Hz)	
Power consumption	Maximum 125 W, Average 88 W	
Screen size (measured diagonally)	Picture tube 55 cm Visible area 51 cm	Picture tube 63 cm Visible area 59 cm
Audio output (Rated power output)	5W + 5W	
Speakers	(5 cm × 12 cm) oval × 2	
External input / output	S/VIDEO-1: S-video input (4 pin mini DIN) VIDEO input (RCA) AUDIO L / R input (RCA)	
	VIDEO-2, VIDEO-3: VIDEO input (RCA) AUDIO L / R input (RCA)	
	LINE OUT: VIDEO output (RCA) AUDIO L / R output (RCA)	
Dimensions (W × H × D)	603 mm × 453.5 mm × 475 mm	663 mm × 517 mm × 495 mm
Weight	22 kg	28 kg
Accessories	• Remote control unit: RM-C231 × 1 • AA / R06 / UM-3 dry cell battery × 2	

Design and specifications subject to change without notice.

JVC

COLOUR TELEVISION

AV-K29MH5
AV-K29MH2
AV-K25MH2
AV-K21MH2

INSTRUCTIONS

Thank you for purchasing this JVC colour television.
To ensure your complete understanding, please read this manual thoroughly before operation.

Contents

Locations 2

Preparation 4

Viewing a Television programme 14

Viewing Images from an External Device 16

Sound and Picture 17

Other Features 20

Troubleshooting 26

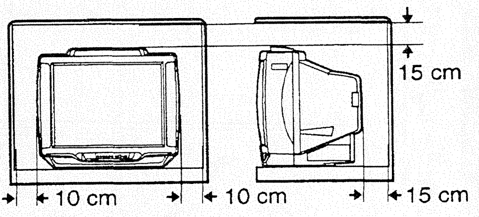
Specifications 27

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:

- TO ENSURE PERSONAL SAFETY, OBSERVE THE FOLLOWING RULES REGARDING THE USE OF THIS TV.
- Operate only from the power source specified on the TV.
- Avoid damaging the power plug and power cord.
- Avoid improper installation and never position this TV where good ventilation is unattainable. When installing this TV distance recommendations must be maintained between the floor and wall, as well as installment in a tightly enclosed area or piece of furniture. Adhere to the minimum distance guidelines shown for safe operation.



- Do not allow objects or liquid into the cabinet openings.
- In the event of a fault, unplug this TV and call a service technician. Do not attempt to repair it yourself or remove the rear cover.
- When you don't use this TV for a long period of time, be sure to disconnect the power plug from the AC outlet.

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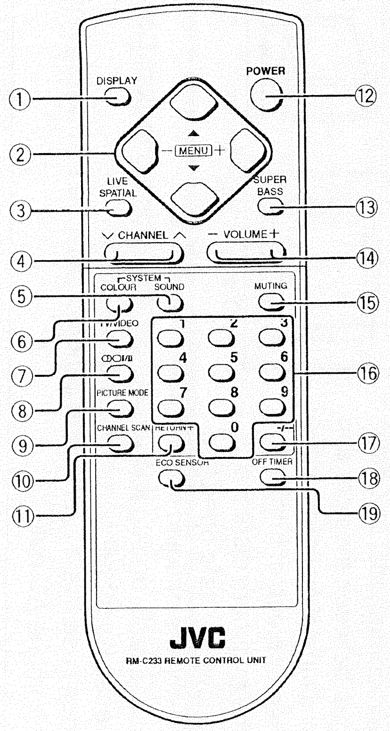
LCT0191-001A-H
0698-T-NV-JMT

Locations

Locations of remote control buttons

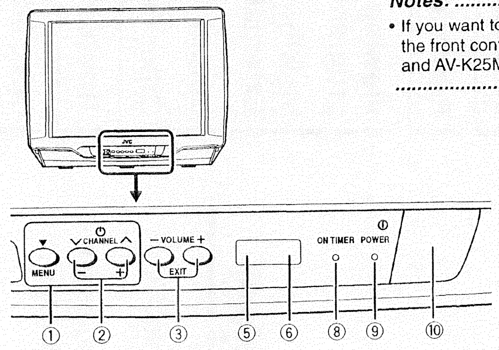

DISPLAY
POWER
MENU
LIVE SPATIAL
SUPER BASS
CHANNEL
VOLUME
SYSTEM
COLOUR
SOUND
MUTING
TV/VIDEO
PICTURE MODE
CHANNEL SCAN
RETURN+
ECO SENSOR
OFF TIMER
-/--
1
2
3
4
5
6
7
8
9
0
JVC
RM-C233 REMOTE CONTROL UNIT
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱
⑲

① DISPLAY button	p.20
② MENU buttons	
• MENU ▲/▼ buttons	
• MENU –/+ buttons	
③ LIVE SPATIAL button	p.18
④ CHANNEL V/Λ buttons	p.14
⑤ SOUND SYSTEM button	p.17
⑥ COLOUR SYSTEM button	p.17
⑦ TV/VIDEO button	p.16
⑧ Multi Sound button	p.17
⑨ PICTURE MODE button	p.18
⑩ CHANNEL SCAN button	p.15
⑪ RETURN + button	p.21
⑫ POWER button	p.7,14,15
⑬ SUPER BASS button (AV-K29MH5 only)	p.18
⑭ VOLUME –/+ buttons	p.15
⑮ MUTING button	p.15
⑯ Number buttons	p.14
⑰ -/-- button	p.14
⑱ OFF TIMER button	p.20
⑲ ECO SENSOR button	p.20

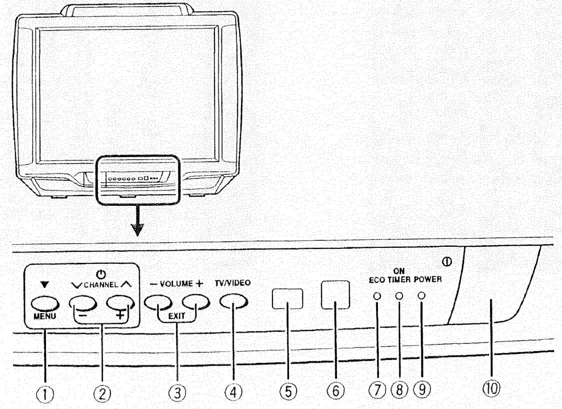
Locations of front panel buttons and lamps

① MENU buttons	p.25
• MENU button	
• MENU –/+ buttons	
② CHANNEL V/Λ buttons	p.15
③ VOLUME –/+ buttons	p.15
④ TV/VIDEO button	p.16

<AV-K21MH2/AV-K25MH2>


JVC
MENU
CHANNEL
VOLUME
EXIT
ON TIMER
POWER
①
②
③
⑤
⑥
⑧
⑨
⑩

<AV-K29MH5/AV-K29MH2>


MENU
CHANNEL
VOLUME
TV/VIDEO
EXIT
ON
ECO TIMER POWER
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩

⑤ ECO sensor	
⑥ Remote control sensor	
⑦ ECO lamp	p.20
⑧ ON TIMER lamp	p.22
⑨ POWER lamp	p.7,14,15
⑩ Main power button	p.7,14,15

Notes:

- If you want to select the video mode using the front control buttons on AV-K21MH2 and AV-K25MH2, see page 16.

1. Connecting the aerial and external devices

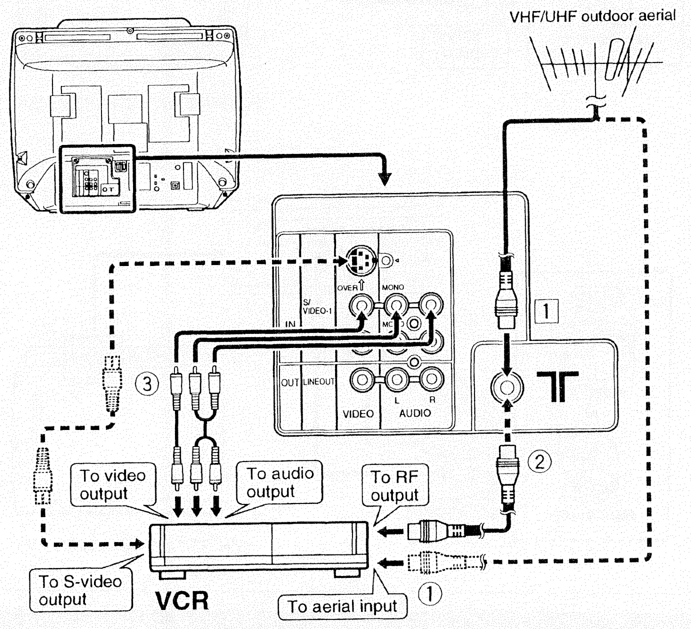
Notes:

- For further details, refer to the manuals provided with the devices you are connecting.
- Connecting cables are not supplied.
- When connecting monaural audio to the TV, use the L/MONO jack.
- The sound and picture that you are watching are output from LINE OUT jacks on the rear panel.

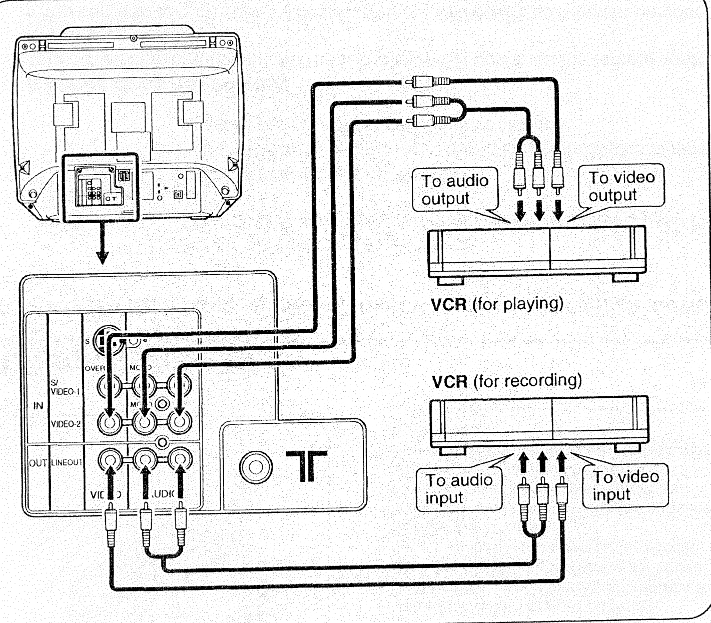
Connecting the aerial and VCR

If not connecting a VCR (video cassette recorder), do $\boxed{1}$.
If connecting a VCR, proceed ① → ② → ③.

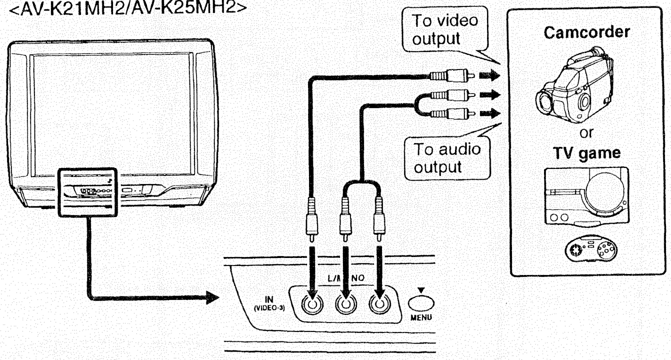
- You can view images from the VCR without doing ③. For details, see "To view images from a VCR connected to the TV with only an aerial cable" on page 16.


VHF/UHF outdoor aerial
S/VIDEO-1
IN
OVER
MONO
OUT
LINEOUT
VIDEO
L
R
AUDIO
1
③
②
To video output
To audio output
To RF output
To S-video output
VCR
To aerial input
①

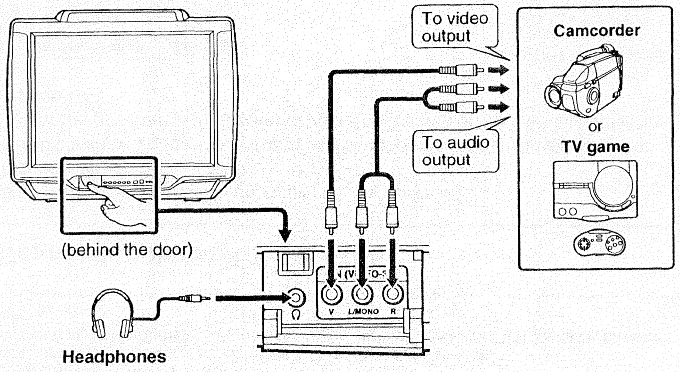
Connecting other external devices


To audio output
To video output
VCR (for playing)
VCR (for recording)
To audio input
To video input
IN
S/VIDEO-1
VIDEO-2
OUT
LINEOUT

<AV-K21MH2/AV-K25MH2>


To video output
To audio output
Camcorder
or
TV game
IN (VIDEO-3)
L/MONO
MENU

<AV-K29MH5/AV-K29MH2>


To video output
To audio output
Camcorder
or
TV game
(behind the door)
V
L/MONO
R
Headphones

Note:

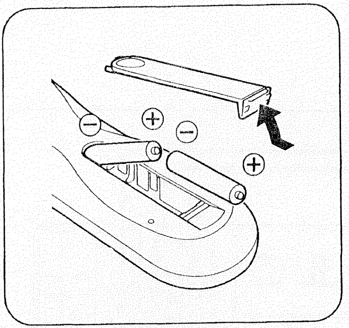
- Use headphones with a stereo mini jack (dia. 3.5 mm). When using headphones, the speaker sound output is disabled.

2. Connecting the power cord

Insert the Power plug into an AC outlet.

3. Inserting batteries into the remote control

Correctly insert two batteries, observing the ⊕ and ⊖ polarities, inserting the ⊖ end first.



CAUTION:

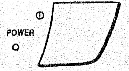
- Follow the cautions printed on the batteries.

Notes:

- Use AA/R6/UM-3 dry cell batteries.
- Battery life is approximately six months to one year depending on frequency of use.
- If the remote control operates erratically, replace the batteries.
- We recommend that you use the supplied batteries initially and replace them as soon as operation becomes erratic. The supplied batteries are for testing, not regular use.

4. Turning your TV on

1. Press the Main power button on the TV to turn the TV's main power on.



For AV-K29MH5 and AV-K29MH2:
The POWER lamp lights red (main power on), then green (TV on).
For AV-K21MH2 and AV-K25MH2:
The POWER lamp lights red. The POWER lamp lights dimmer (main power on), then lights brighter (TV on).

If image does not appear:

Your TV is in the standby mode. Press the POWER button on the remote control to turn your TV on.

- You can also turn on your TV by pressing the CHANNEL ∨/∧ button on your TV.

To turn your TV off:

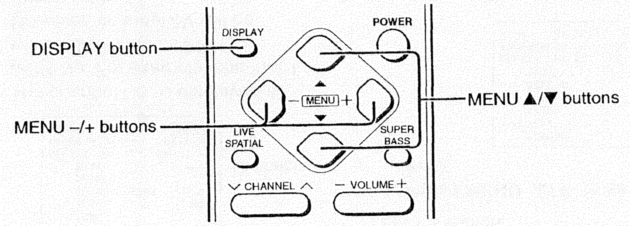
Press the POWER button on the remote control. Your TV enters the standby mode.

To turn the TV's main power off:

Press the Main power button on the TV. The POWER lamp goes off.

5. Selecting the on-screen language

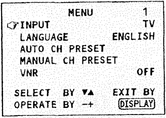
You can select one of three languages for the on-screen display. The displayed menus on the screen are described in the selected language.
In this manual, on-screen descriptions are given in English. Select ENGLISH.



- For details on menu operations using the front control buttons on the TV, see "Menu operations using the front control buttons on the TV" on page 25.

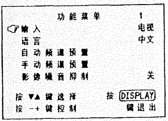
1. Press MENU ▲/▼ to display the following menu.

The following menu is displayed in one of three languages.



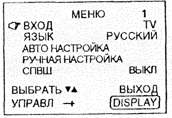
```
          MENU          1
☞INPUT                 TV
 LANGUAGE         ENGLISH
 AUTO CH PRESET
 MANUAL CH PRESET
 VNR                  OFF

SELECT  BY ▼▲     EXIT BY
OPERATE BY –+     DISPLAY
```

English



```
      功能菜单        1
☞输入               电视
 语言               中文
 自动频道预置
 手动频道预置
 影像噪音抑制         关

按▼▲键选择      按DISPLAY
按 –+ 键控制        键退出
```

Chinese



```
         МЕНЮ          1
☞ВХОД                 TV
 ЯЗЫК            РУССКИЙ
 АВТО НАСТРОЙКА
 РУЧНАЯ НАСТРОЙКА
 СПВШ               ВЫКЛ

ВЫБРАТЬ ▼▲         ВЫХОД
УПРАВЛ  –+       DISPLAY
```

Russian

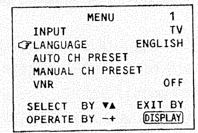
Notes:

- If a different menu is displayed, repeatedly press the MENU ▲/▼ button until this menu is displayed.
- If the menu appears in English, the TV's on-screen language is already set to English, so you can skip steps 2 and 3.

2. Press MENU ▲/▼ to select the second item on the menu.

3. Press MENU –/+ to select ENGLISH .

The menu is displayed in English.



```
          MENU          1
 INPUT                 TV
☞LANGUAGE         ENGLISH
 AUTO CH PRESET
 MANUAL CH PRESET
 VNR                  OFF

SELECT  BY ▼▲     EXIT BY
OPERATE BY –+     DISPLAY
```

4. Proceed to "6. Presetting TV stations" on the following page.

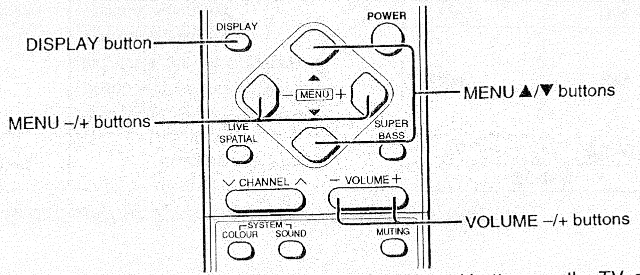
- If you want to complete operations at this stage, press the DISPLAY button to turn the menu display off.

6. Presetting TV stations

To view a TV programme, you must first preset TV stations to channels on the TV.
This TV has 120 channels (channel 1 to 119 and channel AV).
You can choose between two functions, the Auto Channel Preset and Manual Channel Preset and preset TV stations to channels on TV.

Note:

- After you have finished presetting, you can set undesired channels to be skipped over (see "Skip" on page 12).



- For details on menu operations using the front control buttons on the TV, see "Menu operations using the front control buttons on the TV" on page 25.

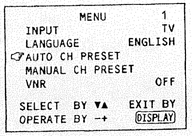
■ Auto Channel Preset

You can automatically preset all TV stations that can be received on your TV to channels in one simple operation.

Notes:

- When you use this function, no station is preset to the channel AV. Channel AV is offered for viewing images from a VCR connected to your TV with only an aerial cable. For more details, see "To view images from a VCR connected to the TV with only an aerial cable" on page 16.
- If the Auto Channel Preset does not work well, preset TV stations manually. For details, see "Manual Channel Preset" on page 10.

1. Press MENU ▲/▼ to select AUTO CH PRESET in the "MENU 1" menu.



```
          MENU          1
 INPUT                 TV
 LANGUAGE         ENGLISH
☞AUTO CH PRESET
 MANUAL CH PRESET
 VNR                  OFF

SELECT  BY ▼▲     EXIT BY
OPERATE BY –+     DISPLAY
```

To display this menu:

Repeatedly press MENU ▲/▼ button until it is displayed.

2. Press MENU – /+ to start the Auto Channel Preset function.

" >>> ON SEARCH" is displayed on the screen.

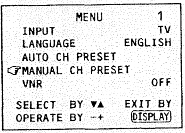
When you have finished presetting all TV channels that can be received on your TV, the display will go out and the Auto Channel Preset function will end.

- To stop the Auto Channel Preset, press the MENU –/+ button.

■ Manual Channel Preset

You can manually preset the desired TV stations to the desired channels.

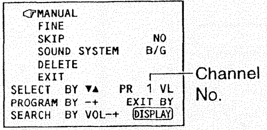
1. Press MENU ▲/▼ to select MANUAL CH PRESET in the “MENU 1” menu.



```
          MENU         1
   INPUT              TV
   LANGUAGE      ENGLISH
   AUTO CH PRESET
 ☞MANUAL CH PRESET
   VNR               OFF

  SELECT  BY ▼▲   EXIT BY
  OPERATE BY -+   DISPLAY
```

To display this menu:
Repeatedly press the MENU ▲/▼ button until it is displayed.

2. Press MENU –/+.
The sub-menu is displayed.



```
 ☞MANUAL
   FINE
   SKIP              NO
   SOUND SYSTEM     B/G
   DELETE
   EXIT
SELECT  BY ▼▲   PR  1 VL
PROGRAM BY -+    EXIT BY
SEARCH  BY VOL-+ DISPLAY
```

- The channel No. is displayed as a PR No. For example, channel 1 will be displayed as PR 1. However, channel AV will be displayed as AV.

3. Press MENU –/+ to select the channel No. to be preset.

4. Press VOLUME –/+ to start selection of the TV station.
“ >>> ” or “ <<< ” is displayed on the screen.

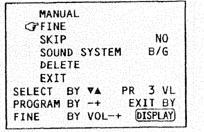
When a TV station is received, the “ >>> ” or “ <<< ” display goes out, and the TV station is preset to the currently selected channel No.

- If you have selected the wrong TV station for preset, repeatedly press the VOLUME –/+ button until the desired TV station is selected.
- To stop the Manual Channel Preset, press any button other than the VOLUME –/+ button.

If the picture is not clear:

Use the Fine function to fine-tune the TV station.

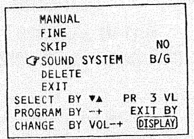
1. **Press MENU ▲/▼ to select FINE.**



```
   MANUAL
 ☞FINE
   SKIP              NO
   SOUND SYSTEM     B/G
   DELETE
   EXIT
SELECT  BY ▼▲   PR  3 VL
PROGRAM BY -+    EXIT BY
FINE    BY VOL-+ DISPLAY
```

2. **Hold VOLUME –/+ down to fine-tune the TV station so that the best image is displayed on screen.**
“ > ” or “ < ” indicates that the TV station is being fine-tuned.

5. Press MENU ▲/▼ to select SOUND SYSTEM.



```
   MANUAL
   FINE
   SKIP              NO
 ☞SOUND SYSTEM     B/G
   DELETE
   EXIT
SELECT  BY ▼▲   PR  3 VL
PROGRAM BY -+    EXIT BY
CHANGE  BY VOL-+ DISPLAY
```

6. Press VOLUME –/+ to select the appropriate sound system.

- For the sound systems in each country or region, refer to the table “The Broadcasting systems of Each country or Region” below.

7. Press MENU ▲/▼ to select MANUAL.

8. Repeat steps 3 to 7 if you want to preset another TV station to a channel.

9. Press DISPLAY to turn the display off.

The Broadcasting Systems of Each Country or Region

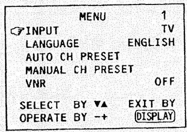
Area	Country or Region	System	
		Colour	Sound
Asia, Middle East	Bahrain, Kuwait, Oman, Qatar, United Arab Emirates, Yemen, etc. Indonesia, Malaysia, Singapore, Thailand, India, etc.	PAL	B/G
	China, Vietnam, etc.	PAL	D/K
	Hong Kong, etc.	PAL	I
	Islamic Republic of Iran, Lebanon, Saudi Arabia, etc.	SECAM	B/G
	Philippine, Taiwan, Myanmar, etc.	NTSC	M
Europe	Russia, etc.	SECAM	D/K
	Czech Republic, Poland, etc.	PAL	D/K
	Germany, Holland, Belgium, etc.	PAL	B/G
	UK, etc.	PAL	I
Oceania	Australia, New Zealand, etc.	PAL	B/G
Africa	Republic of South Africa, etc.	PAL	I
	Nigeria, etc.	PAL	B/G
	Egypt, Morocco, etc.	SECAM	B/G

■ Skip

When selecting channels, you can set undesired channels to be skipped.
Channels set to be skipped cannot be selected by the CHANNEL ∨/∧ buttons nor the CHANNEL SCAN button.

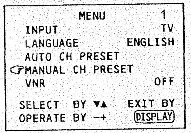
- Channels to which a station has not been preset are automatically set to be skipped.

1. Press MENU ▲/▼ to display the "MENU 1" menu.


MENU 1
☞INPUT TV
LANGUAGE ENGLISH
AUTO CH PRESET
MANUAL CH PRESET
VNR OFF
SELECT BY ▼▲ EXIT BY
OPERATE BY –+ DISPLAY

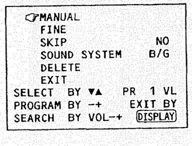
- If a different menu is displayed, repeatedly press the MENU ▲/▼ button until this menu is displayed.

2. Press MENU ▲/▼ to select MANUAL CH PRESET.

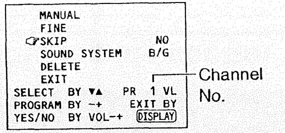

MENU 1
INPUT TV
LANGUAGE ENGLISH
AUTO CH PRESET
☞MANUAL CH PRESET
VNR OFF
SELECT BY ▼▲ EXIT BY
OPERATE BY –+ DISPLAY

3. Press MENU –/+.

The sub-menu is displayed.


☞MANUAL
FINE
SKIP NO
SOUND SYSTEM B/G
DELETE
EXIT
SELECT BY ▼▲ PR 1 VL
PROGRAM BY –+ EXIT BY
SEARCH BY VOL–+ DISPLAY

4. Press MENU ▲/▼ to select SKIP.

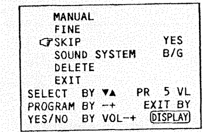

MANUAL
FINE
☞SKIP NO
SOUND SYSTEM B/G
DELETE
EXIT
SELECT BY ▼▲ PR 1 VL
PROGRAM BY –+ EXIT BY
YES/NO BY VOL–+ DISPLAY
Channel No.

- The channel No. is displayed as a PR No. For example, channel 1 will be displayed as PR 1. However, channel AV will be displayed as AV.

5. Press MENU –/+ to select the channel you want to skip.

6. Press VOLUME –/+ to select YES.

The channel you selected is set to be skipped.


MANUAL
FINE
☞SKIP YES
SOUND SYSTEM B/G
DELETE
EXIT
SELECT BY ▼▲ PR 5 VL
PROGRAM BY –+ EXIT BY
YES/NO BY VOL–+ DISPLAY

To cancel the Skip:
select NO.

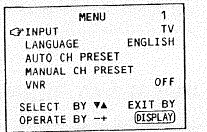
7. Repeat steps 5 and 6 if you want to set another channel to skip.

8. Press DISPLAY to turn the display off.

■ Delete

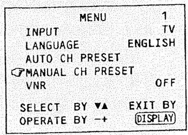
You can delete a TV station already preset to a channel.

1. Press MENU ▲/▼ to display the "MENU 1" menu.


MENU 1
☞INPUT TV
LANGUAGE ENGLISH
AUTO CH PRESET
MANUAL CH PRESET
VNR OFF
SELECT BY ▼▲ EXIT BY
OPERATE BY –+ DISPLAY

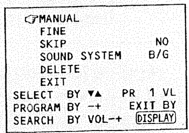
- If a different menu is displayed, repeatedly press the MENU ▲/▼ button until this menu is displayed.

2. Press MENU ▲/▼ to select MANUAL CH PRESET.

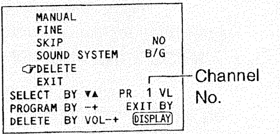

MENU 1
INPUT TV
LANGUAGE ENGLISH
AUTO CH PRESET
☞MANUAL CH PRESET
VNR OFF
SELECT BY ▼▲ EXIT BY
OPERATE BY –+ DISPLAY

3. Press MENU –/+.

The sub-menu is displayed.


☞MANUAL
FINE
SKIP NO
SOUND SYSTEM B/G
DELETE
EXIT
SELECT BY ▼▲ PR 1 VL
PROGRAM BY –+ EXIT BY
SEARCH BY VOL–+ DISPLAY

4. Press MENU ▲/▼ to select DELETE.


MANUAL
FINE
SKIP NO
SOUND SYSTEM B/G
☞DELETE
EXIT
SELECT BY ▼▲ PR 1 VL
PROGRAM BY –+ EXIT BY
DELETE BY VOL–+ DISPLAY
Channel No.

- The channel No. is displayed as a PR No. For example, channel 1 will be displayed as PR 1. However, channel AV will be displayed as AV.

5. Press MENU –/+ to select a channel of TV station you want to delete.

6. Press VOLUME –/+.

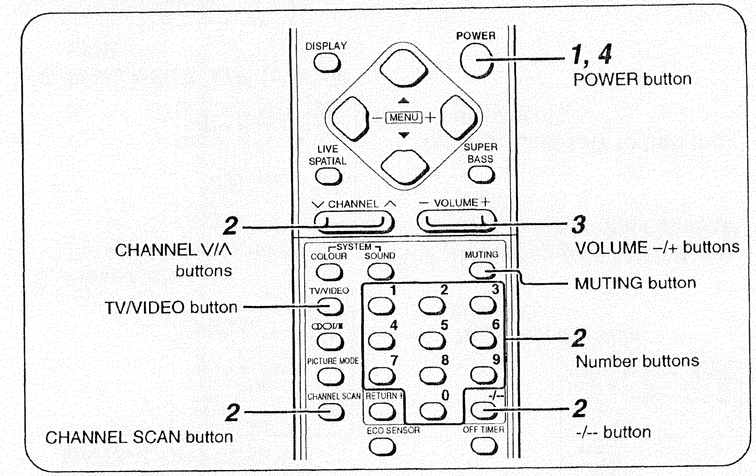
The station preset to that channel is deleted.

- When you delete a station set to a channel, the channel number of every station after it moves forward by one.

7. Repeat steps 5 and 6 if you want to delete another TV station.

8. Press DISPLAY to turn the display off.

Using the remote control


DISPLAY
POWER
MENU
LIVE SPATIAL
SUPER BASS
CHANNEL
VOLUME
SYSTEM
COLOUR
SOUND
MUTING
TV/VIDEO
PICTURE MODE
CHANNEL SCAN
RETURN
ECO SENSOR
OFF TIMER
1
2
3
4
5
6
7
8
9
0
-/--
1, 4
POWER button
2
CHANNEL V/Λ buttons
3
VOLUME –/+ buttons
MUTING button
TV/VIDEO button
2
Number buttons
2
CHANNEL SCAN button
2
-/-- button

1. Press POWER to turn your TV on.

For AV-K29MH5 and AV-K29MH2:
The POWER lamp changes from red to green.
For AV-K21MH2 and AV-K25MH2:
The POWER lamp lights brighter.

Notes:

- If your TV does not turn on, press the Main power button on the TV then press the POWER button again.
- You can also turn on your TV by pressing any of the following buttons;
  - the CHANNEL V/Λ button
  - the Number buttons
  - the TV/VIDEO button

2. Select a PR channel.

■ Up/ down selection

1. Press CHANNEL V/Λ .

■ Direct selection

1. Repeatedly press the -/-- button to select the desired mode then press the Number buttons.

- : 1-digit mode
(example)
Channel 6 → Press 6.
Channel AV → Press 0.

- - : 2-digit mode
(example)
Channel 6 → Press 0, 6.
Channel 16 → Press 1, 6.
Channel AV → Press 0, 0.

- - - : 3-digit mode
(example)
Channel 6 → Press 0, 0, 6.
Channel 16 → Press 0, 1, 6.
Channel 116 → Press 1, 1, 6.
Channel AV → Press 0, 0, 0.

■ Channel Scan selection

You can search for the channel you want to view while scanning all of the channels that can be viewed on this TV.

1. Press CHANNEL SCAN.
Channels will be scanned in channel No. order.

2. When the channel that you want to view appears, press CHANNEL SCAN again before scanning for the next channel begins.

Note:

- Up/down and Channel Scan selections cannot be selected for channels to which the Skip has been set to YES. (See "Skip" on page 12.)

If the colour is abnormal:
Repeatedly press the COLOUR SYSTEM button to select the appropriate colour system. For details, see "Colour System" on page 17.

3. Press VOLUME –/+ to adjust the sound.

To temporarily render the sound inaudible:
Press the MUTING button.

- To return the sound, press the MUTING button again.

If the sound is abnormal:
Repeatedly press the SOUND SYSTEM button to select the appropriate sound system. For details, see "Sound System" on page 17.

4. To turn your TV off, press POWER.

For AV-K29MH5 and AV-K29MH2:
The POWER lamp changes from green to red.
For AV-K21MH2 and AV-K25MH2:
The POWER lamp lights dimmer.

Note:

- We recommend that you press the Main power button on the TV to turn the main power off if you do not plan to use your TV for a long time or if you wish to save energy.

Using the front panel buttons on the TV

1. Press CHANNEL V/Λ to turn your TV on.

Note:

- If your TV does not turn on, press the Main power button and then press the CHANNEL V/Λ button again.

2. Press CHANNEL V/Λ to select a channel.

3. Press VOLUME –/+ to adjust the sound.

4. To turn your TV off, press the Main power button to turn the main power off.

The POWER lamp goes off.

- If you press the Main power button again, your TV turns on immediately. Step 1 is no longer required.

Viewing Image from an External Device

You can view images from VCRs or other external devices connected to your TV.

1. **Repeatedly press TV/VIDEO to select the VIDEO mode according to the jacks to which the external device you want to view is connected.**

Each press of the TV/VIDEO button changes the mode as follows.

TV mode → **Channel number or AV** → **VIDEO mode:** **VIDEO-1 or S/VIDEO-1** → **VIDEO-2** → **VIDEO-3** → (back to TV mode)

TV mode:

This mode is for viewing TV programmes. Repeatedly press the TV/VIDEO button, or press the CHANNEL V/Λ buttons, or press the number buttons to return to this mode.

When "S/VIDEO-1" is displayed:

The TV shows images from an external device connected to the S terminal.

Note:

- When VCRs or other external devices are connected to both the S terminal and the video input jack of VIDEO-1 terminal, the TV shows images from the VCR or other external devices connected to the S terminal.

To view images from a VCR connected to the TV with only an aerial cable:

Your VCR must be preset to the channel AV of this TV.

Thoroughly read the manual of your VCR, and preset your VCR to the channel AV using the Manual Channel Preset function on page 10.

As a result, you can view images from your VCR when you select the channel AV in the TV mode.

If the colour is abnormal:

Repeatedly press the COLOUR SYSTEM button to select the appropriate colour system. For details, see "Colour System" on page 17.

To select the VIDEO mode using the front control buttons on the TV:

When not using the remote control, you can select the VIDEO mode using the MENU buttons on the TV.

1. **Repeatedly press the MENU button to select INPUT from "MENU 1" menu.**
2. **Repeatedly press the MENU –/+ button to select the VIDEO mode.**

Notes:

- The AV-K29MH5 and AV-K29MH2 have a TV/VIDEO button in the front control buttons on the TV that can be used to select the VIDEO mode.
- For details, see "Menu operations using the front control buttons on the TV" on page 25.

Sound and Picture

Colour System

If the colour is abnormal, select the appropriate colour system. Each press of the COLOUR SYSTEM button changes the colour system as follows.

→ AUTO → PAL → SECAM → NTSC3.58 → NTSC4.43 → (back to AUTO)

AUTO:

Automatic colour system selection

Notes:

- For the colour systems in each country or region, see the table "The Broadcasting Systems of Each Country or Region" on page 11.
- If the colour is abnormal even though you selected AUTO, change the appropriate colour system manually.

Sound System

If the sound is abnormal, select the appropriate sound system. Each press of the SOUND SYSTEM button changes the sound system as follows.

→ B/G → I → D/K → M → (back to B/G)

Notes:

- For the sound systems in each country or region, see the table "The Broadcasting Systems of Each Country or Region" on page 11.
- You cannot select any sound system when in VIDEO mode.

Multi Sound

You can select the sound system for stereo broadcast programmes and bilingual programmes. To do this, press the Multi Sound button repeatedly to select a sound system.

ꝏ : Stereo sound
Ⅰ : Bilingual I (sub I)
Ⅱ : Bilingual II (sub II)
○ : Monaural sound
MONO: Cancels the Multi Sound function, and the sound becomes monaural.

Notes:

- Depending on signal quality the Multi Sound function may not work properly. If the Multi Sound function is not working correctly, and there is unwanted noise in the sound, select MONO to cancel it. once the Multi Sound function has been cancelled even stereo and bilingual programmes will remain in monaural.
- The Multi Sound function has no effect on programmes other than A2 or NICAM broadcast programmes.
- When displaying the current channel number, the current Multi Sound mode appears for approx. 3 seconds.

Picture Mode

You can select one of three picture adjustment modes.

Repeatedly press the PICTURE MODE button to select the desired mode.

BRIGHT:
Heightens contrast and sharpness.

STANDARD:
Standardizes picture adjustments.

SOFT:
Softens contrast and sharpness.

Note: ....

- Pressing the PICTURE MODE button returns all the picture settings in the "MENU 3" menu to their default settings.

....

Super Bass
(AV-K29MH5 only)

You can enjoy a powerful bass sound by using the Super Bass (Super Bass Reflex) function.

Press the SUPER BASS button.

To return to normal sound, press the SUPER BASS button again.

Note: ....

- The AV-K29MH2, AV-K25MH2, and AV-K21MH2 do not have this function.

....

Live Spatial

You can enjoy Surround sound with a "live" effect by using the LIVE SPATIAL (LIVE SPATIAL SURROUND) function.

Repeatedly press the LIVE SPATIAL button to select the desired mode.

LIVE SPATIAL:
Live spatial allows you to enjoy normal stereo sound converting it into surround sound with added depth and ambience.

MONO SPATIAL:
Mono spatial allows you to enjoy normal monaural sound by converting it into a stereo-like sound.

OFF:
Returns to normal sound.

Notes: ....

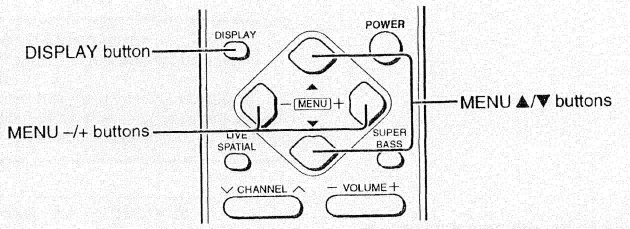
- The LIVE SPATIAL works properly only with stereo sound.
- The MONO SPATIAL works properly only with monaural sound.
- The LIVE SPATIAL mode does not work correctly with headphones.

....

- The LIVE SPATIAL is manufactured under license from Desper Products, Inc.

Picture/Sound Adjustment

You can adjust the picture and sound as you like.

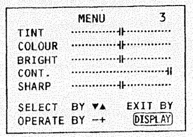


- For details on menu operations using the front control buttons on the TV, see "Menu operations using the front control buttons on the TV" on page 25.

1. **Press MENU ▲/▼ to display a menu.**

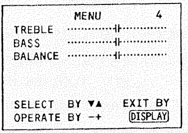
2. **Press MENU ▲/▼ repeatedly to display the desired menu.**

To adjust the picture:
Display the "MENU 3" menu.



```
          MENU        3
TINT     ..........||..........
COLOUR   ..........||..........
BRIGHT   ..........||..........
CONT.    ......................||
SHARP    ..........||..........

SELECT  BY ▼▲      EXIT BY
OPERATE BY -+      DISPLAY
```

To adjust the sound:
Display the "MENU 4" menu.



```
          MENU        4
TREBLE   ..........||..........
BASS     ..........||..........
BALANCE  ..........||..........



SELECT  BY ▼▲      EXIT BY
OPERATE BY -+      DISPLAY
```

3. **Press MENU ▲/▼ to select an item and press MENU –/+ to adjust it.**

–	Item	+
Reddish	TINT (tint)	Greenish
Lighter	COLOUR (colour depth)	Deeper
Darker	BRIGHT (brightness)	Brighter
Lower	CONT. (contrast)	Higher
Softer	SHARP (sharpness)	Sharper
Lower	TREBLE (high-frequency sound level)	Higher
Lower	BASS (low-frequency sound level)	Higher
Left	BALANCE (left/right speaker balance)	Right

Note: ....

- TINT (tint) is displayed only when viewing images from NTSC3.58 or NTSC4.43 colour systems.

....

4. **Press DISPLAY to turn the display off.**

Display

You can continuously display the current channel number or VIDEO mode on the screen.
Press the DISPLAY button.
To turn the display off, press the DISPLAY button again.

Note: ....

- When selecting a channel or VIDEO mode with no input signal, indication of selected channel or VIDEO mode becomes fixed on the screen.

....

Off Timer

You can set this TV to turn off automatically within a specified period of time.
Repeatedly press the OFF TIMER button to select the period of time.

- You can set the period of time a maximum of 120 minutes in 10 minute increments.
- 1 minute before the Off Timer turns off the TV, "GOOD NIGHT!" displays.

To display the remaining time:

Press the OFF TIMER button once.

To cancel the Off Timer:

Press the OFF TIMER button to return the period of time to 0.

Note: ....

- The Off Timer will not turn off the TV's main power.

....

Eco Sensor

You can adjust this TV so that the screen automatically adjusts to the optimum contrast according to the brightness of your room. This function reduces eye strain and the power consumption of this TV.
Repeatedly press the ECO SENSOR button to select the desired mode.

ECO SENSOR DISPLAY:

The Eco Sensor function will work. In this mode, the heart mark ♥ indicating the brightness of your room is displayed for several seconds each time the brightness changes. The number of heart marks displayed on screen increases as your room becomes darker. Up to six heart marks are displayed.

ECO SENSOR:

The Eco Sensor function will work. However, in this mode, the heart mark ♥ will not be displayed even if the brightness of your room changes.

ECO SENSOR OFF:

The Eco Sensor function will not work.

- If your TV is AV-K29MH5 or AV-K29MH2, the ECO lamp will light when the Eco Sensor function is working.

Return +

By setting a channel to "Return channel", you can return to that channel with one touch.

1. **Press CHANNEL V/Λ or the Number buttons to select a channel to set to "Return channel".**
2. **Press RETURN + for more than 3 seconds continuously.**
   "RETURN PLUS PROGRAMMED!" appears.
3. **When viewing another channel, press RETURN +.**
   The channel changes to the channel set for "Return channel".

To cancel the channel set for "Return channel":

Press the RETURN + button for more than 3 seconds continuously.

- "RETURN PLUS CANCELLED!" appears.

Notes: ....

- When you turn the TV off, the "Return channel" setting will be canceled.
- When you press the RETURN + button while viewing the channel set for "Return channel", the channel changes to the previously viewed channel.
- When you press the RETURN + button while in a VIDEO mode, the mode switches to TV mode. To return to the channel set for "Return channel", press the RETURN + button again.

....

When there is no setting for "Return channel":

When you press the RETURN + button, the channel changes to the previously viewed channel.

Demonstration

The demonstration runs automatically and introduces the menus of this TV's main features.

Note: ....

- Starting the demonstration may change some part of each of the current function settings.

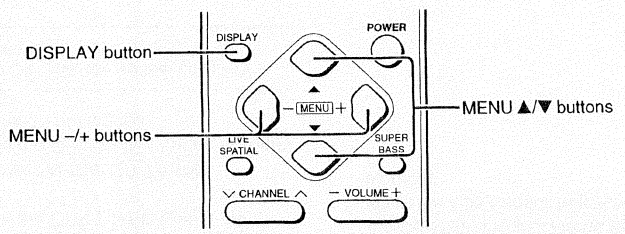
....

1. **Press MENU ▲/▼ to display a menu.**
2. **Press the -/-- button.**
   The demonstration bigins.
   - To stop the demonstration, press any button.

When operating with the front control buttons on the TV:

Press the TV's MENU + button and the VOLUME + button at the same time.

- To stop the demonstration, press any button.

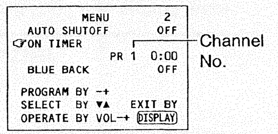


- For details on menu operations using the front control buttons on the TV, see "Menu operations using the front control buttons on the TV" on page 25.

On Timer

Your TV will automatically turn on and tune into the channel you want after a certain period of time you have specified.

1. **Repeatedly press MENU ▲/▼ to display the "MENU 2" menu, and Press MENU ▲/▼ to select ON TIMER.**



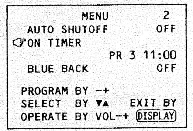
```
          MENU          2
  AUTO SHUTOFF        OFF
☞ON TIMER
              PR 1   0:00
  BLUE BACK           OFF

 PROGRAM BY –+
 SELECT  BY ▼▲    EXIT BY
 OPERATE BY VOL–+ DISPLAY
```

2. **Press MENU –/+ to select a channel you want to view when the TV turns on.**

Note:
- You cannot select the channel AV, the VIDEO modes, and the channels for which the Skip is set. (See "Skip" on page 12)

3. **Press VOLUME –/+ to select the period of time after which you want to turn on the TV.**

The ON TIMER lamp lights and the On Timer starts.
- Each time you press the button, the period of time changes in 15 minute intervals (up to 12 hours).



```
          MENU          2
  AUTO SHUTOFF        OFF
☞ON TIMER
              PR 3  11:00
  BLUE BACK           OFF

 PROGRAM BY –+
 SELECT  BY ▼▲    EXIT BY
 OPERATE BY VOL–+ DISPLAY
```

To cancel the On Timer:

Press the VOLUME –/+ button to return the period of time to "0:00".

4. **Press DISPLAY to turn the display off.**
5. **Press POWER to turn the TV off.**

The ON TIMER lamp will stay lit.

Notes:
- If you turn off the TV's main power by pressing the Main power button, the On Timer setting is canceled.
- If you do not turn off the TV after starting the On Timer, once the time set for the On Timer is reached, the channel will automatically switch to the channel set for the On Timer.

While the On Timer is operating:

The ON TIMER lamp lights.

When the time set for the On Timer is reached:

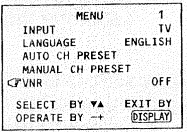
The TV automatically turns on and the channel set for the On Timer is displayed.

Notes:
- For safety reasons the TV will automatically turn off if no operations are made within approximately two hours after the TV is turned on with the On Timer.
- The Off Timer and Auto Shutoff have priority over the On Timer.

VNR (Video Noise Reduction)

You can reduce the picture noise.

1. **Repeatedly press MENU ▲/▼ to display the "MENU 1" menu, and press MENU ▲/▼ to select VNR.**



```
          MENU          1
  INPUT                TV
  LANGUAGE        ENGLISH
  AUTO CH PRESET
  MANUAL CH PRESET
☞VNR                  OFF

 SELECT  BY ▼▲    EXIT BY
 OPERATE BY –+    DISPLAY
```

2. **Press MENU –/+ to select "ON" or "OFF."**

ON:
Activates the VNR. Select "ON" when viewing a noisy picture.

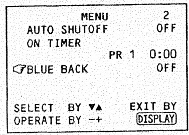
OFF:
Cancels the VNR.

3. **Press DISPLAY to turn the display off.**

Blue Back

You can mute the sound and change the picture into a blue screen while no signals come into the TV, or when the input signals are unstable.

1. **Repeatedly press MENU ▲/▼ to display the "MENU 2" menu, and press MENU ▲/▼ to select BLUE BACK.**



```
          MENU          2
  AUTO SHUTOFF        OFF
  ON TIMER
              PR 1   0:00
☞BLUE BACK            OFF


 SELECT  BY ▼▲    EXIT BY
 OPERATE BY –+    DISPLAY
```

2. **Press MENU –/+ to select "ON" or "OFF."**

ON:
Activates the Blue Back.

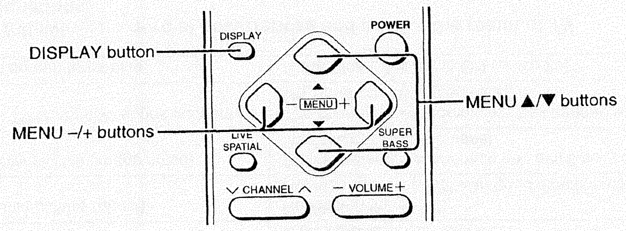
OFF:
Cancels the Blue Back.

Notes:
- To view a broadcast even when the reception signal is poor, set the Blue Back to OFF.
- Even when the Blue Back is set to OFF, the sound may not be audible.
- The Blue Back function does not operate in VIDEO mode.

3. **Press DISPLAY to turn the display off.**

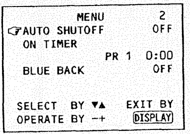
Auto Shutoff

You can set your TV to turn off if no signals are received for about 15 minutes or longer after the end of a broadcast.



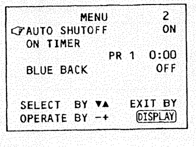
- For details on menu operations using the front control buttons on the TV, see "Menu operations using the front control buttons on the TV" on page 25.

1. **Press MENU ▲/▼ to display the "MENU 2" menu, and press MENU ▲/▼ to select AUTO SHUTOFF.**



```
             MENU           2
☞AUTO SHUTOFF             OFF
  ON TIMER
                  PR 1   0:00
  BLUE BACK               OFF

 SELECT  BY ▼▲     EXIT BY
 OPERATE BY -+     DISPLAY
```

2. **Press MENU –/+ to select "ON" or "OFF".**



```
             MENU           2
☞AUTO SHUTOFF              ON
  ON TIMER
                  PR 1   0:00
  BLUE BACK               OFF

 SELECT  BY ▼▲     EXIT BY
 OPERATE BY -+     DISPLAY
```

ON:
Activates the Auto Shutoff.

OFF:
Cancels the Auto Shutoff.

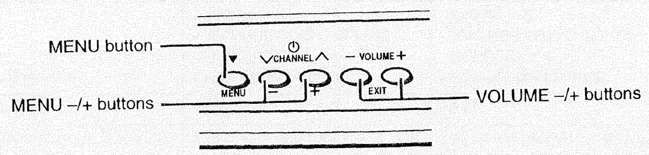
3. **Press DISPLAY to turn the display off.**

Notes:

- The Auto Shutoff function does not turn off the TV's main power.
- The Auto Shutoff will not work for a VIDEO mode.

Menu operations using the front control buttons on the TV

You can operate functions in menus using the front control buttons on the TV without having to use the remote control.



1. **Press MENU to display the menu.**

If the desired menu is not displayed:
Repeatedly press the MENU button until the desired menu is displayed.

2. **Repeatedly press MENU to select the desired function or item.**

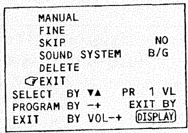
To select a function or item above the currently selected function or menu:
Repeatedly press the MENU button to proceed to another menu, and then repeatedly press the MENU button again to return to the original menu. Then select the function or item.

3. **Press MENU –/+ or VOLUME –/+ to carry out the desired operation.**
   - For details, see the description for the respective function.

4. **Press VOLUME –/+ to turn the menu display off.**

If the sub-menu is displayed:
The sub-menu cannot be turned off by the VOLUME –/+ button when it is displayed. Follow the procedure below to turn the sub-menu display off.

1. **Press MENU to select EXIT.**



```
     MANUAL
     FINE
     SKIP                  NO
     SOUND SYSTEM         B/G
     DELETE
   ☞EXIT
 SELECT  BY ▼▲     PR  1 VL
 PROGRAM BY -+       EXIT BY
 EXIT    BY VOL-+    DISPLAY
```

2. **Press VOLUME –/+ to turn the sub-menu display off.**

Troubleshooting

Important: Review all the instructions in this manual.

Problem	Check/Action
Cannot turn TV on	Press the Main power button (see p.7). Insert the power plug in an AC outlet.
No picture nor sound	Press the TV/VIDEO button to select the correct mode (see p.16). Check the aerial connections.
Remote control inoperable	Replace the batteries (see p.7).
The TV turns on suddenly.	The TV will automatically turn on when the On Timer is operated (see p.22).
The TV turns off suddenly.	The TV will automatically turn off in the following cases. • When the Off Timer or Auto Shutoff is operated (see p.20 and p.24). • When no operations are made within approximately two hours after the TV was turned on with the On Timer (see p.22).
Abnormal sound	Select the appropriate sound system (see p.17).
Abnormal colour	Adjust the colour and brightness (see p.19). Select the appropriate colour system (see p.17). Set the Picture mode to STANDARD (see p.18).
Lines or streaks in picture (interference)	Move the components apart until the interference disappears. Reposition the aerial.
Spotted picture (crosstalk)	Move the aerial away from the source of interference. Replace the aerial cable with a coaxial cable, which is less prone to interference.
Double picture (ghost)	Reposition the aerial. Replace with an aerial with good directionality.
Snowy picture (image noise)	Check the aerial connection and aim it correctly. Replace or repair the aerial.
The TV channel changes suddenly.	The channel will automatically be changed when the On Timer operates (see p.22).
The screen turns blue.	Is the Blue Back set to ON (see p.23) ?

The following are normal occurrences and are not the result of TV malfunctions:

- When you touch the CRT surface, you might feel a slight charge of static electricity. This is because the CRT contains static electricity; it does not affect the human body.
- Your TV may emit a crackling sound due to a sudden change in temperature. There is no problem unless the picture or sound is abnormal.
- When a still bright image (of a white dress, for example) appears on the screen, the image may be coloured. This problem occurs in all CRTs, and when the bright image disappears, the colouration also disappears.
- This TV is equipped with a microcomputer that may operate abnormally due to interference from external devices. If this happens, press the Main power button to turn the main power off and disconnect the power plug from the AC outlet. Then, reconnect the power plug to the AC outlet and press the Main power button again.

Specifications

Model	AV-K29MH5	AV-K29MH2
TV RF systems	B, G, I, D, K, K1, M	
Colour systems	PAL, SECAM, NTSC 3.58 / 4.43 MHz	
Channel and frequencies	VHF low channel (VL) = 46.25 to 168.25 MHz VHF high channel (VH) = 175.25 to 463.25 MHz UHF channel (U) = 471.25 to 863.25 MHz ■ Receives cable channels in mid band (X to Z, S1 to S10), super band (S11 to S20) and hyper band (S21 to S41) .	
Sound-multiplex system	A2 / NICAM system	
Power input	AC120 to 240 V, 50 / 60 Hz (operating AC 90 to 260 V, 50 / 60 Hz)	
Power consumption	Maximum 185 W, Average 120 W	Maximum 180 W, Average 120 W
Screen size (measured diagonally)	Picture tube 73 cm Visible area 68 cm	
Audio output (Rated power output)	15W + 15W	10W + 10W
Speakers	10 cm round × 2 3.5 cm round × 2	10 cm round × 2
External input / output	S/VIDEO-1: S-video input (4 pin mini DIN) VIDEO input (RCA) AUDIO L / R input (RCA)	
	VIDEO-2, VIDEO-3: VIDEO input (RCA) AUDIO L / R input (RCA)	
	LINE OUT: VIDEO output (RCA) AUDIO L / R output (RCA)	
	Headphone jack: stereo mini jack (dia. 3.5 mm)	
Dimensions (W × H × D)	734 mm × 605 mm × 521 mm	734 mm × 583 mm × 521 mm
Weight	42 kg	40 kg
Accessories	• Remote control unit: RM-C233 × 1 • AA / R06 / UM-3 dry cell battery × 2	• Remote control unit: RM-C237 × 1 • AA / R06 / UM-3 dry cell battery × 2

Design and specifications subject to change without notice.

Specifications

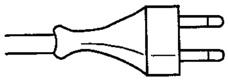
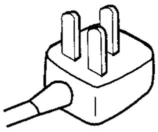
Model	AV-K21MH2	AV-K25MH2
TV RF systems	B, G, I, D, K, K1, M	
Colour systems	PAL, SECAM, NTSC 3.58 / 4.43 MHz	
Channel and frequencies	VHF low channel (VL) = 46.25 to 168.25 MHz VHF high channel (VH) = 175.25 to 463.25 MHz UHF channel (U) = 471.25 to 863.25 MHz ■ Receives cable channels in mid band (X to Z, S1 to S10), super band (S11 to S20) and hyper band (S21 to S41) .	
Sound-multiplex system	A2 / NICAM system	
Power input	AC120 to 240 V, 50 / 60 Hz (operating AC 90 to 260 V, 50 / 60 Hz)	
Power consumption	Maximum 125 W, Average 88 W	
Screen size (measured diagonally)	Picture tube 55 cm Visible area 51 cm	Picture tube 63 cm Visible area 59 cm
Audio output (Rated power output)	5W + 5W	
Speakers	(5 cm × 12 cm) oval × 2	
External input / output	S/VIDEO-1: S-video input (4 pin mini DIN) VIDEO input (RCA) AUDIO L / R input (RCA)	
	VIDEO-2, VIDEO-3: VIDEO input (RCA) AUDIO L / R input (RCA)	
	LINE OUT: VIDEO output (RCA) AUDIO L / R output (RCA)	
Dimensions (W × H × D)	603 mm × 453.5 mm × 475 mm	663 mm × 517 mm × 495 mm
Weight	22 kg	28 kg
Accessories	• Remote control unit: RM-C237 × 1 • AA / R06 / UM-3 dry cell battery × 2	

Design and specifications subject to change without notice.

JVC

VICTOR COMPANY OF JAPAN, LIMITED

MAIN DIFFERENCE LIST

⚠	PARTS No.		PARTS NAME	Description
	AV-K21MS2	AV-K21MH2		
	SCM-1013A-H2 [With TELETEXT]	SCM-1014A-H2 [Without TELETEXT]	MAIN PWB ASSY	
⚠	QMP40D0-200J5 	QMPN050-200-E2 	POWER CORD	
	CM12955-016-H	CM12955-017-H	FRONT CABINET	
⚠	CM22925-001	CM22925-012	RATING LABEL	
	CP11781-002-H	CP11781-005-H	PACKING CASE	
	RM-C231-1C	RM-C237-1C	REMOTE CONTROL UNIT	
⚠	LCT0189-001A-H	LCT0191-001A-H	INST BOOK	

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Unplug the power supply cord.
2. Remove the **9** screws marked **A** as shown in figure.
3. Withdraw the rear cover toward you.

REMOVING THE CHASSIS

- After removing the rear cover.

1. Slightly raise the both sides of the chassis by hand and remove the 2 claws under the both sides of the chassis from the front cabinet.
2. Withdraw the chassis backward.
   (If necessary, take off the wire clamp, connectors etc.)

REMOVING THE AV TERMI. BOARD

- After removing the rear cover.

1. Remove the 2 screws marked **B** as shown in figure.
2. While raising the claw marked **C**, remove the top of the AV TERMI. board slightly in the direction of arrow **D** as shown in Fig.1.

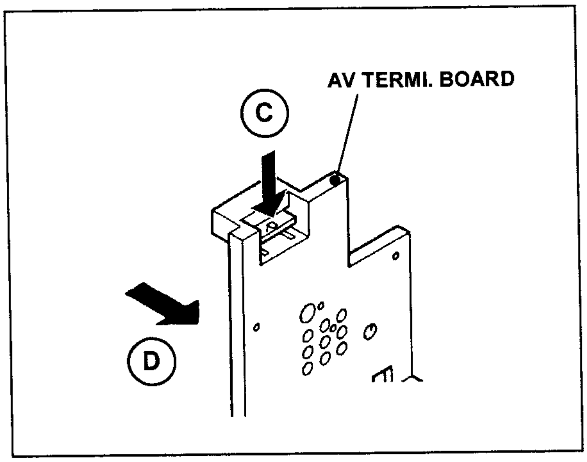


Fig.1

REMOVING THE CONTROL BASE

- After removing the rear cover & the chassis.

1. While pushing down the claws marked **E**, remove the CONTROL BASE in the arrow direction marked **F** as shown in Fig. 2.
   (If necessary, take off the wire clamp, connectors etc.)

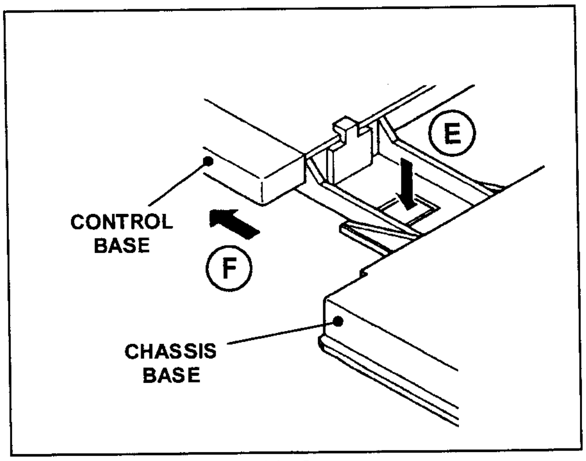


Fig.2

REMOVING THE SPEAKER

- After removing the rear cover.

1. Remove the 2 screws marked **G** as shown in figure.
2. Follow the same steps when removing the other hand speaker.

CHECKING THE PW BOARD

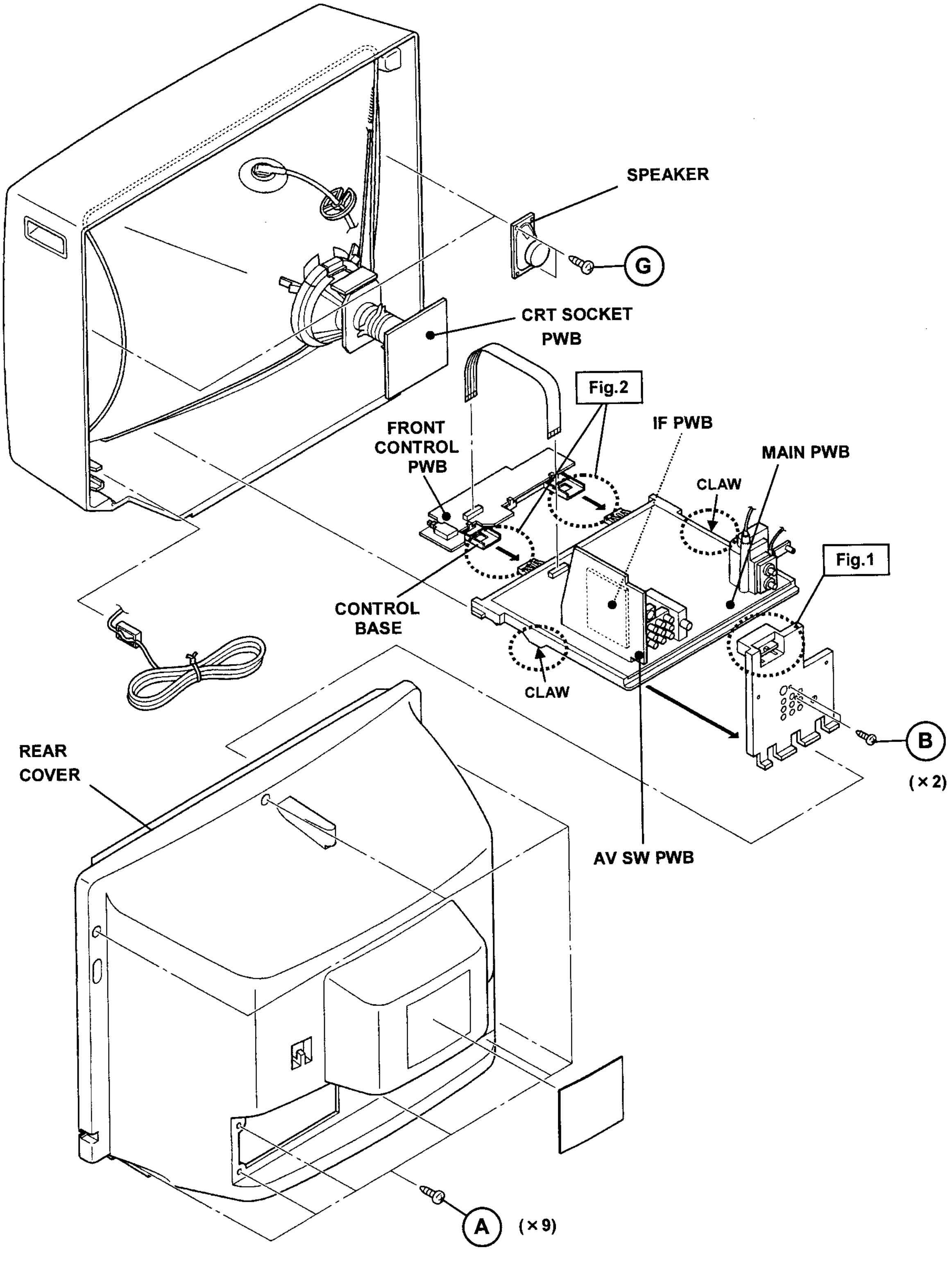
1. To check the back side of the PW Board.
   1) Pull out the chassis. (Refer to REMOVING THE CHASSIS)
   2) Erect the chassis vertically so that you can easily check the back side of the PW Board.

[CAUTION]

- When erecting the chassis, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the CRT earth wire and other connectors are properly connected.

WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.


SPEAKER
G
CRT SOCKET
PWB
Fig.2
FRONT
CONTROL
PWB
IF PWB
MAIN PWB
CLAW
Fig.1
CONTROL
BASE
CLAW
B
(×2)
REAR
COVER
AV SW PWB
A
(×9)

REPLACEMENT OF MEMORY ICs

1. MEMORY ICs

This TV uses memory ICs. In the memory ICs are memorized data for correctly operating the video and deflection circuits. When replacing memory ICs, be sure to use ICs written with the initial values of data.

2. PROCEDURE FOR REPLACING MEMORY ICs

(1) Power off
Switch the power off and unplug the power cord from the wall outlet.

(2) Replace ICs
Be sure to use memory ICs written with the initial data values.

(3) Power on
Plug the power cord into the wall outlet and switch the power on.

(4) Check and set SYSTEM CONSTANT SET:

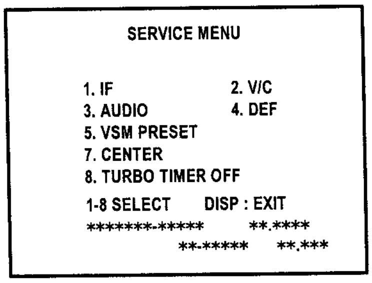
1) Press the DISPLAY key and the PICTURE MODE key of the REMOTE CONTROL UNIT simultaneously.
2) The SERVICE MENU screen of Fig. 1 will be displayed.
3) While the SERVICE MENU on display, press the DISPLAY key and PICTURE MODE key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed
4) Check the setting value of the SYSTEM CONSTANT SET of Table 1. If the value is different, select the setting item with the MENU ▽/△ key, and set the correct value with the MENU - / + key.
5) Press the DISPLAY key twice, and return to the normal screen.

(5) Receive channel of setting
Refer to the **OPERATING INSTRUCTIONS** and set the receive channels (channels preset) as described

(6) User Setting
Check the user setting value of Table 2, and if setting value is different, set the correct value.
For setting, refer to the **OPERATING INSTRUCTIONS**.

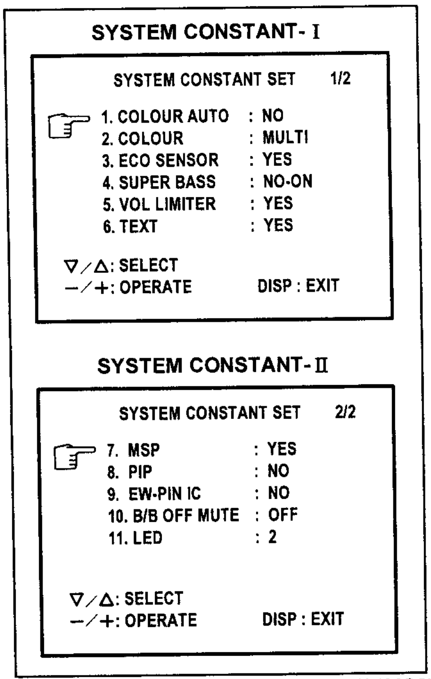
(7) Setting of SERVICE MENU
Verify the setting items of the SERVICE MENU of Table 3, and reset where necessary.
For setting, refer to the **SERVICE ADJUSTMENTS**.

SERVICE MENU



```
SERVICE MENU

1. IF              2. V/C
3. AUDIO           4. DEF
5. VSM PRESET
7. CENTER
8. TURBO TIMER OFF
1-8 SELECT     DISP : EXIT
*******-*****        **.****
           **-*****    **.***
```

Fig.1



SYSTEM CONSTANT- I

```
SYSTEM CONSTANT SET     1/2

1. COLOUR AUTO   : NO
2. COLOUR        : MULTI
3. ECO SENSOR    : YES
4. SUPER BASS    : NO-ON
5. VOL LIMITER   : YES
6. TEXT          : YES

▽/△: SELECT
−/+: OPERATE          DISP : EXIT
```

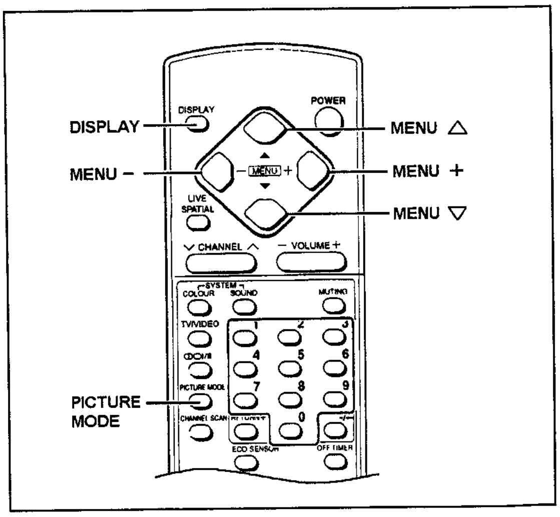
SYSTEM CONSTANT-Ⅱ

```
SYSTEM CONSTANT SET     2/2

7. MSP            : YES
8. PIP            : NO
9. EW-PIN IC      : NO
10. B/B OFF MUTE  : OFF
11. LED           : 2

▽/△: SELECT
−/+: OPERATE          DISP : EXIT
```

(The figures are about the model AV-K21MS2)

Fig.2

REMOTE CONTROL KEY NAME



SETTING OF SYSTEM CONSTANT SET (Table 1)

Setting item	Setting content	Setting value	
		AV-K21MS2	AV-K21MH2
1. COLOUR AUTO	→ YES → NO	NO	←
2. COLOUR	→ MULTI → TRIPLE → PAL	MULTI	←
3. ECO SENSOR	→ YES → NO	YES	←
4. SUPER BASS	→ YES-SB → YES-BA → NO-ON → NO-OFF	NO-ON	←
5. VOL LIMITER	→ YES → NO	YES	←
6. TEXT	→ YES → NO	YES	NO
7. MSP	→ YES → NO	YES	←
8. PIP	→ YES → NO	NO	←
9. EW-PIN IC	→ YES → NO	NO	←
10. B/B OFF MUTE	→ ON → OFF	OFF	←
11. LED	→ 2 → 3	2	←

USER SETTING VALUES (Table 2)

Setting item	Setting value
SUB POWER	ON
CHANNEL	1 POSITION
CHANNEL PRESET	Refer to OPERATING INSTRUCTION
VOLUME	Appropriate sound volume
TV/VIDEO	TV
ON SCREEN DISPLAY	POSITION NUMBER DISPLAY
COLOUR SYSTEM	PAL
SOUND SYSTEM	B / G
BILINGUAL MODE	STEREO
VNR	OFF

Setting item	Setting value
LANGUAGE	ENGLISH
LIVE SPATIAL	OFF
OFF TIMER	OFF
PICTURE MODE (VSM)	BRIGHT
ECO SENSOR	OFF
TREBLE	CENTER
BASS	CENTER
BALANCE	CENTER
AUTO SHUTOFF	OFF
BLUE BACK	OFF
ON TIMER	PR1 0:00

SERVICE MENU SETTING ITEMS (Table 3)

Service menu	Setting item	Service menu	Setting item
1. IF	1. VCO 2. DELAY POINT	**3. AUDIO (Do not adjust)**	1. CONC LIMIT 2. A2 ID THR 3. SOUND SYSTEM
2. V/C	1. CUTOFF(R/G/B) 2. DRIVE(R/B) 3. BRIGHT 4. CONT 5. COLOUR 6. TINT 7. BLACK OFFSET(R-Y/B-Y) 8. SHARP 9. TEXT(RGB)CONT 10. BS.OFF 11. BS.POINT 12. DC TRAN RATE 13. APA-CON FO/SW 14. VSM PHASE 15. VSM GAIN 16. CLL SW 17. CLL LEVEL 18. ABL POINT 19. ABL GAIN 20. Y-DL 21. P.ACL SW 22. WPL SW. 23. Y GAMMA	**4. DEF**	2. V-SHIFT **(Fixed)** 3. V-SIZE 4. H-CENT 10. V-S.CR 10. V-LINE
		5. VSM PRESET (BRIGHT/STD/SOFT)	1. TINT 2. COLOUR 3. BRIGHT 4. CONT 5. SHARP
		7. CENTER ADJUST (Do not adjust)	TREBLE BASS
		8. TURBO TIMER	ON/OFF

SERVICE ADJUSTMENTS

BEFORE STARTING SERVICE ADJUSTMENT

1. **There are 2 way of adjusting this TV: One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.**
2. **The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.**
3. Turn on the power of the TV and measuring equipment for warming up for at least 30 minutes before staring adjustment.
4. Make sure that connection is correctly made to AC power source.
5. If the receive or input signal is not specified, use the most appropriate signal for adjustment.
6. Never touch parts (such as variable resistors, transformers and condensers) not shown in the adjustment items of this service adjustment.
7. Preparation for adjustment (presetting):
   Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT.

PICTURE MODE (VSM)	BRIGHT
ECO SENSOR	OFF
LIVE SPATIAL	OFF
TREBLE/BASS/BALANCE	CENTER
VNR	OFF

MEASUREMENT INSTRUMENT AND FIXTURES

1. DC voltmeter (or digital voltmeter)
2. Oscilloscope
3. Signal generator (Pattern generator) [PAL / SECAM / NTSC]
4. Remote control unit

ADJUSTMENT ITEMS

Adjustment item	Adjustment item
B1 POWER SUPPLY	DEFLECTION circuit adjustment
FOCUS adjustment	VSM PRESET adjustment
IF circuit adjustment	AUDIO adjustment
VIDEO/CHROMA circuit adjustment	CENTER adjustment

BASIC OPERATION OF SERVICE MENU

1. **TOOL OF SERVICE MENU OPERATION**
   Operate the SERVICE MENU with the REMOTE CONTROL UNIT.

2. **SERVICE MENU ITEMS**
   With the SERVICE MENU, various settings (adjustments) can be made, and they are broadly classified in the following items of settings :

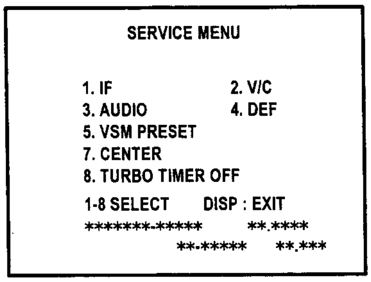
● 1. IF ······················	For entering/adjusting the setting values (adjustment values) of the IF circuit.
● 2. V/C ·····················	For entering/adjusting the setting values (adjustment values) of the VIDEO/CHROMA circuit.
● 3. AUDIO····················	For entering / adjusting the setting values (adjustment values) of the multiplicity sound circuit.
● 4. DEF ·····················	For entering / adjusting the setting values (adjustment values) of the DEFLECTION circuit.
● 5. VSM PRESET ·············	For setting the values of STANDARD, SOFT and BRIGHT (VSM : video status memory)
● 7. CENTER··················	For setting the CENTER ADJUST values of TREBLE and BASS.
● 8. TURBO TIMER ···········	For quick setting the values of TIMER COUNT-adjustable not only by minutes but also by second. If it is on, the time in TIMER mode changes from 1 minute into 1 second temporarily. If you turn the TV power off, this setting becomes OFF automatically. (applicable to OFF TIMER, ON TIMER, AUTO SHUTOFF)

3. BASIC OPERATION OF SERVICE MENU

(1) How to enter SERVICE MENU

Press the DISPLAY key and the PICTURE MODE key of the REMOTE CONTROL UNIT simultaneously.
The SERVICE MENU screen of Fig. 1 will be displayed.

SERVICE MENU



```
        SERVICE MENU

1. IF               2. V/C
3. AUDIO            4. DEF
5. VSM PRESET
7. CENTER
8. TURBO TIMER OFF
1-8 SELECT     DISP : EXIT
*******-*****       **.****
           **-*****    **.***
```

Fig.1

(2) Selection of SUB MENU SCREEN

Press one of the keys 1 ~ 8 of the REMOTE CONTROL UNIT, and select the SUB MENU SCREEN (See Fig.2) from the SERVICE MENU.

SERVICE MENU → SUB MENU

1. IF
2. V / C
3. AUDIO
4. DEF
5. VSM PRESET
7. CENTER
8. TURBO TIMER

(3) Method of Setting

- Once the setting values are set, they are memorized automatically.
- It must not adjust without signal.

1) **1. IF**

[1. VCO]

① 1 Key ··························	Select **1. IF.**
② 1 Key ··························	Select 1. VCO. CW)

③ The VCO(CW) screen will be displayed in yellow when the AFC voltage is at a certain level and in blue when it is at other levels.

④ DISPLAY Key ···················	When this is pressed twice, you will return to the SERVICE MENU.

[2. DELAY POINT]

① 1 Key ··························	Select **1. IF.**
② 2 Key ··························	Select 2. DELAY POINT.
③ MENU - / + Key ················	Set (adjust) the setting values of the setting items.
④ DISPLAY Key ···················	When this is pressed twice, you will return to the SERVICE MENU.

2) **2. V/C 3. AUDIO / 4.DEF / 5.VSM PRESET and 7.CENTER**

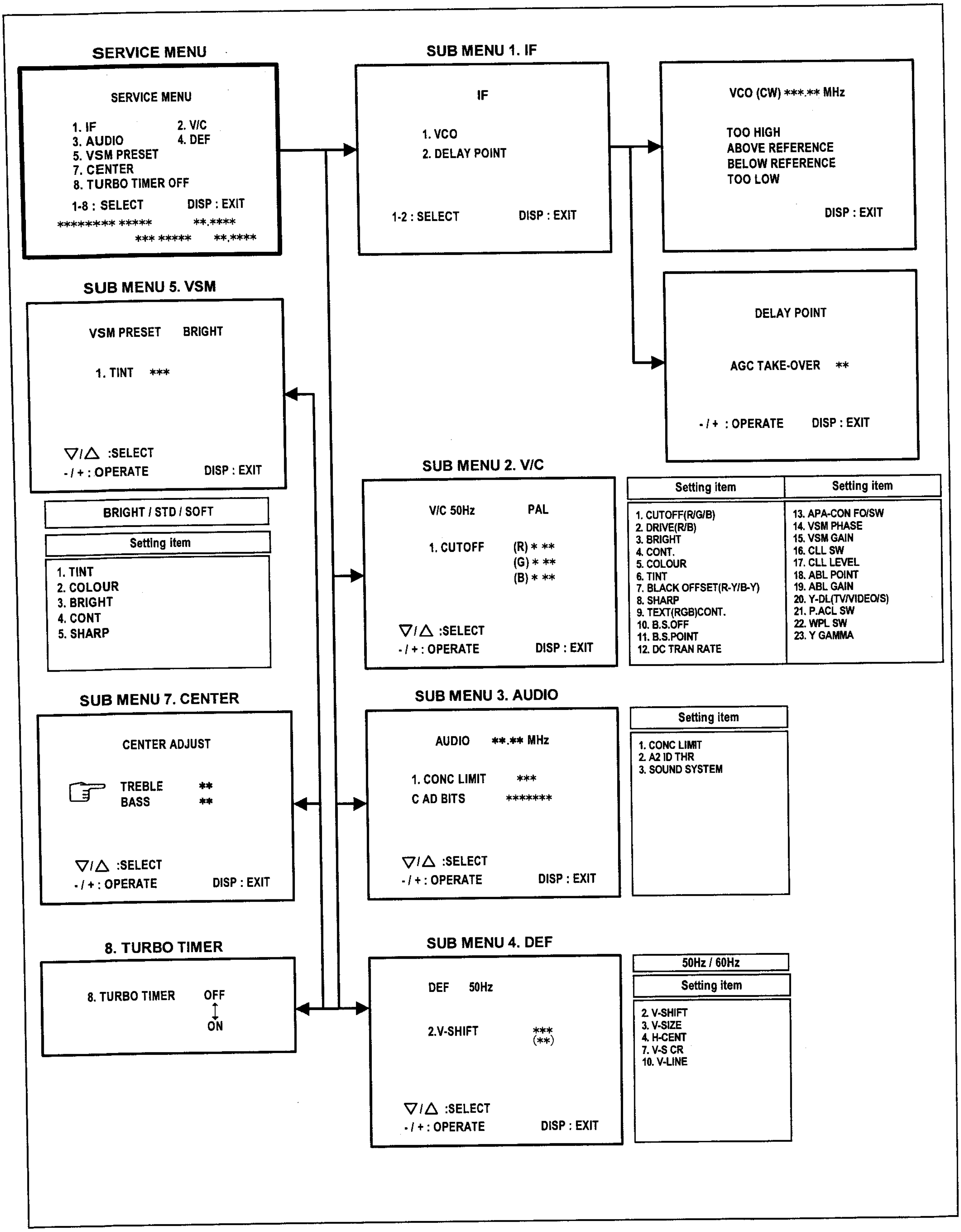
① 2~7 Keys ······················	Select one from **2. V/C, 3.AUDIO, 4.DEF, 5.VSM PRESET** and **7.CENTER**
② MENU △ / ▽ key ··············	Select setting items.
③ MENU - / + Key ················	Set (adjust) the setting values of the setting items. (Use the number keys of the REMOTE CONTROL UNIT for setting of WHITE BALANCE AND BLACK OFFSET. For the setting, refer to each item concerned.)
④ DISPLAY Key ···················	When this is pressed , you will return to the SERVICE MENU.

3) **8. TURBO TIMER**

① By pressing the 8-key, you can change the ON/OFF position.

(4) Release of SERVICE MENU

After completing the setting, return to the SERVICE MENU, then again press the DISPLAY key.


SERVICE MENU
SERVICE MENU
1. IF
2. V/C
3. AUDIO
4. DEF
5. VSM PRESET
7. CENTER
8. TURBO TIMER OFF
1-8 : SELECT
DISP : EXIT
******** *****
.**
*** *****
.**
SUB MENU 1. IF
IF
1. VCO
2. DELAY POINT
1-2 : SELECT
DISP : EXIT
VCO (CW) ***.** MHz
TOO HIGH
ABOVE REFERENCE
BELOW REFERENCE
TOO LOW
DISP : EXIT
DELAY POINT
AGC TAKE-OVER **
- / + : OPERATE
DISP : EXIT
SUB MENU 5. VSM
VSM PRESET
BRIGHT
1. TINT ***
▽/△ :SELECT
- / + : OPERATE
DISP : EXIT
BRIGHT / STD / SOFT
SUB MENU 2. V/C
V/C 50Hz
PAL
1. CUTOFF
(R) * **
(G) * **
(B) * **
▽/△ :SELECT
- / + : OPERATE
DISP : EXIT
SUB MENU 7. CENTER
CENTER ADJUST
TREBLE **
BASS **
▽/△ :SELECT
- / + : OPERATE
DISP : EXIT
SUB MENU 3. AUDIO
AUDIO **.** MHz
1. CONC LIMIT ***
C AD BITS *******
▽/△ :SELECT
- / + : OPERATE
DISP : EXIT
8. TURBO TIMER
8. TURBO TIMER
OFF
ON
SUB MENU 4. DEF
DEF 50Hz
2.V-SHIFT
***
(**)
▽/△ :SELECT
- / + : OPERATE
DISP : EXIT
50Hz / 60Hz

Setting item

1. TINT
2. COLOUR
3. BRIGHT
4. CONT
5. SHARP

Setting item	Setting item
1. CUTOFF(R/G/B) 2. DRIVE(R/B) 3. BRIGHT 4. CONT. 5. COLOUR 6. TINT 7. BLACK OFFSET(R-Y/B-Y) 8. SHARP 9. TEXT(RGB)CONT. 10. B.S.OFF 11. B.S.POINT 12. DC TRAN RATE	13. APA-CON FO/SW 14. VSM PHASE 15. VSM GAIN 16. CLL SW 17. CLL LEVEL 18. ABL POINT 19. ABL GAIN 20. Y-DL(TV/VIDEO/S) 21. P.ACL SW 22. WPL SW 23. Y GAMMA

Setting item

1. CONC LIMIT
2. A2 ID THR
3. SOUND SYSTEM

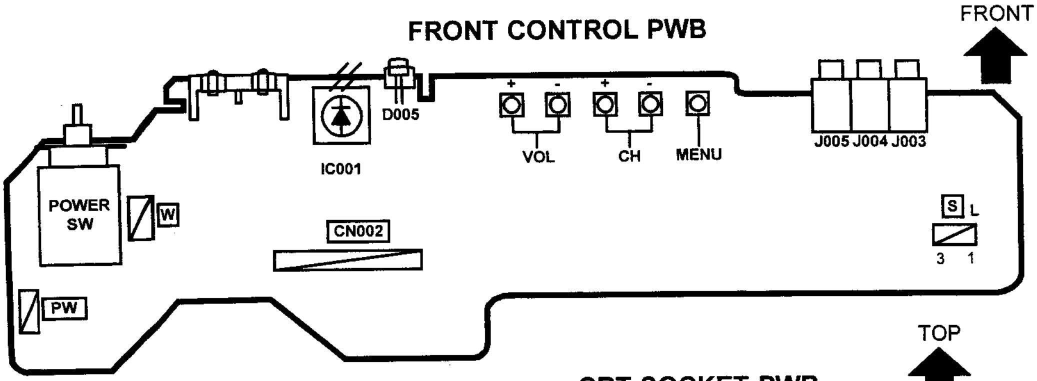
Setting item

2. V-SHIFT
3. V-SIZE
4. H-CENT
7. V-S CR
10. V-LINE

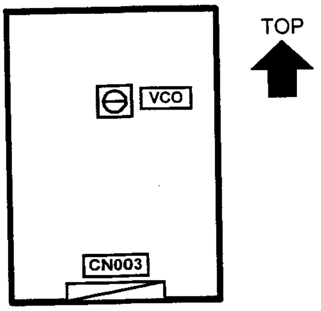
Fig.2

ADJUSTMENT LOCATIONS

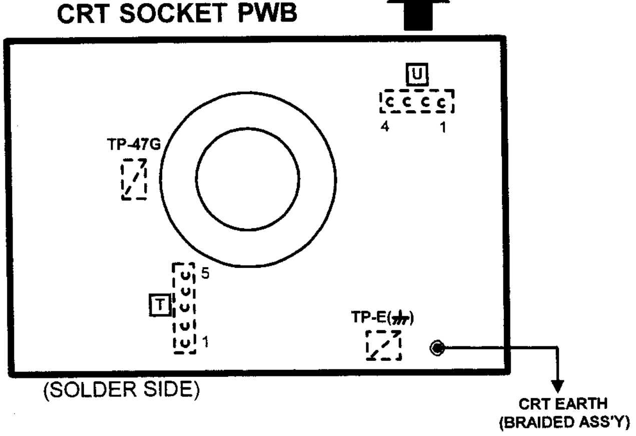
FRONT CONTROL PWB


FRONT
D005
IC001
+
-
VOL
CH
MENU
J005 J004 J003
POWER SW
W
CN002
S L
3 1
PW

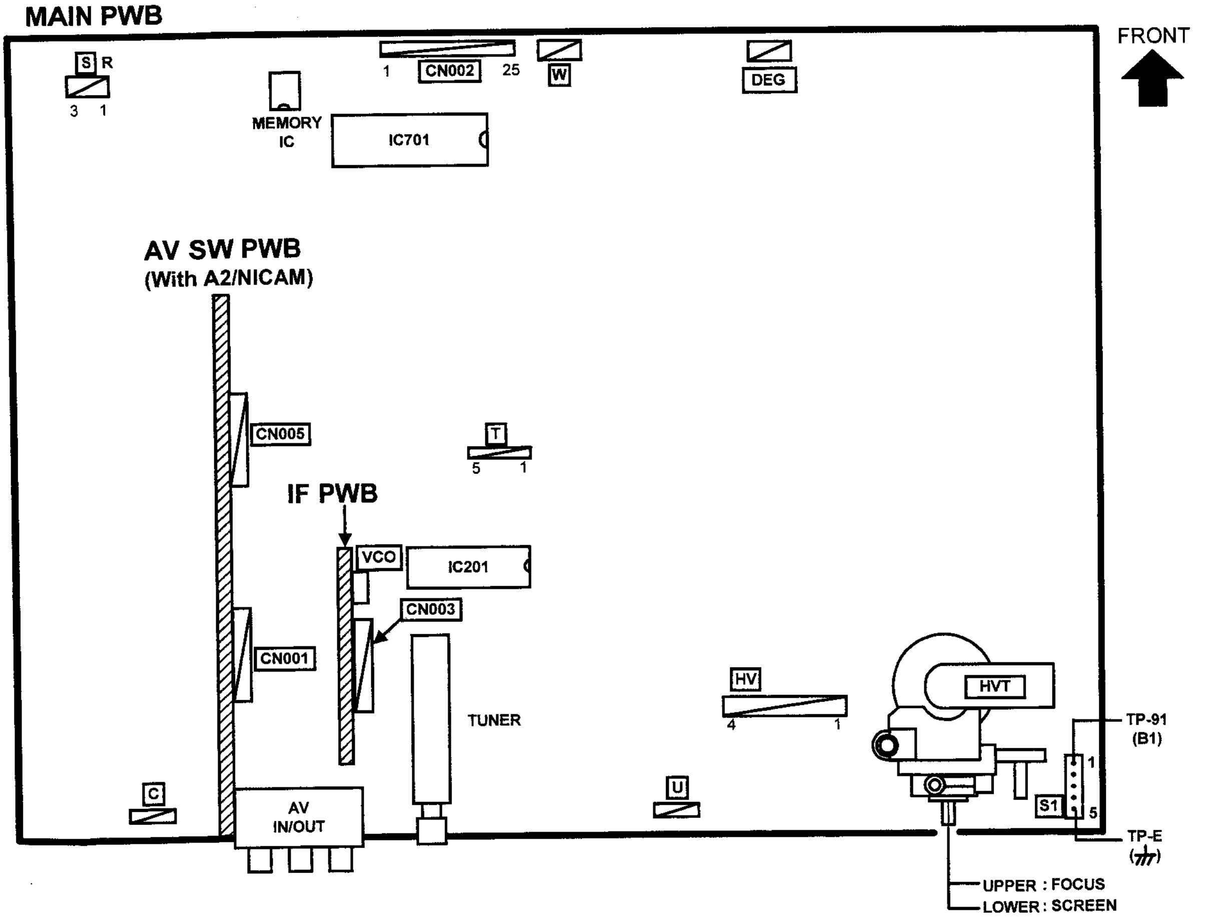
IF PWB


TOP
VCO
CN003

CRT SOCKET PWB


TOP
U
4 1
TP-47G
5
T
1
TP-E(⏚)
(SOLDER SIDE)
CRT EARTH
(BRAIDED ASS'Y)

MAIN PWB


FRONT
S R
3 1
1
CN002
25
W
DEG
MEMORY IC
IC701
AV SW PWB
(With A2/NICAM)
CN005
T
5 1
IF PWB
VCO
IC201
CN003
CN001
TUNER
HV
4 1
HVT
TP-91
(B1)
1
S1
5
TP-E
(⏚)
C
AV IN/OUT
U
UPPER : FOCUS
LOWER : SCREEN

ADJUSTMENTS

B1 POWER SUPPLY

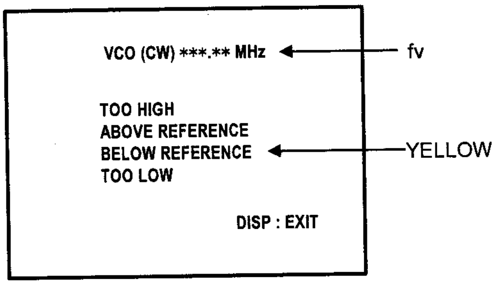
Item	Measuring instrument	Test point	Adjustment part	Description
Check of B1 POWER SUPPLY	Signal generator DC Volt-meter	TP-91 (B1) TP-E (⏚) [S1 connector]		1. Receive a whole black signal. 2. Connect a DC voltmeter to TP-91(B1) and TP-E (⏚). 3. Make sure that the voltage is DC114.5V±1V.

FOCUS ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of FOCUS	Signal generator		FOCUS VR [In HVT]	1. Receive a cross-hatch signal. 2. While watching the screen, adjust the FOCUS VR to make the vertical and horizontal lines as fine and sharp as possible. 3. Make sure that when the screen is darkened, the lines remain in good focus.

IF CIRCUIT ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of VCO(CW)	Remote control unit		VCO(CW) TRANSF. [On IF PWB]	● Under normal conditions, no adjustment is required. 1. Select **1. IF** from the SERVICE MENU. 2. Press the **1** key and select 1. VCO. 3. Select a receivable broadcast channel with the CHANNEL key. 4. Turn the core of VCO TRANSF. on IF PWB until the colour of the characters TOO HIGH displayed on the screen changes from blue to **yellow**. (Step 1) 5. Then slowly turn the core of VCO TRANSF. counter-clockwise until the colour of the characters BELOW REFERENCE changes from blue to **yellow**. (Step 3) 6. Press the display key three times to return to normal screen. 7. Perform CHANNEL PRESET again, and make sure that each broadcast is being received properly.



Screen display	Step 1	→ 2	→ 3
TOO HIGH	**Yellow**	Blue	Blue
ABOVE REFERENCE	Blue	**Yellow**	Blue
BELOW REFERENCE	Blue	Blue	**Yellow**
TOO LOW	Blue	→	Blue

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of DELAY POINT	Remote control unit		DELAY POINT (AGC TAKE-OVER)	1. Receive a black and white signal (colour off). 2. Select **1. IF** from the SERVICE MENU. 3. Select **2. DELAY POINT** by pressing the **2** key on the remote control. 4. Adjust the MENU - or + key until video noise disappears. 5. Press the DISPLAY key three times to return to normal screen. 6. Turn to other channels and make sure that there are not irregularities.

Setting (adjustment) item	Variable range	Initial setting value
DELAY POINT (AGC TAKE-OVER)	0~63	24

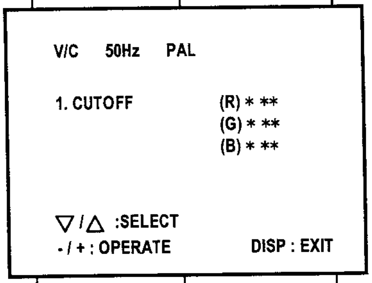
V / C CIRCUIT ADJUSTMENT

The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.
The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

- **Do not change the initial setting values of the setting (adjustment) items not listed in " ADJUSTMENT ".**

Colour system / Setting item	Variable range	Initial setting value			
		PAL	SECAM	NTSC 3.58	NTSC 4.43
1. CUT OFF (R / G / B)	-128~+127	0	←	←	←
2. DRIVE (R / B)	-128~+127	0	←	←	←
3. BRIGHT	-128~+128	+2	←	←	←
4. CONT.	-59~+27	-4	←	←	←
5. COLOUR	-60~+68	+7	+3	+14	-2
6. TINT TV / VIDEO	-66~+61	——	——	+11 / -4	-4 / -4
7. BLACK OFFSET (R-Y / B-Y)	-8~+7	——	+3 / -1	——	——
8. SHARP TV / VIDEO	-32~+31	-10 / -5	←	←	←
9. TEXT (RGB) CONT.	-128~+77	+30	←	←	←
10. B.S.OFF	0~+1	0	←	←	←
11. B.S.POINT	0~+7	+6	←	←	←
12. DC TRAN RATE	0~+7	+6	←	←	←
13. APA-CON FO/SW	0~+3	+2	←	←	←
14. VSM PHASE	0~+3	+2	←	←	←
15. VSM GAIN	0~+3	+2	←	←	←
16. CLL SW	0~+1	0	←	←	←
17. CLL LEVEL	0~+3	+2	←	←	←
18. ABL POINT	0~+7	+3	←	←	←
19. ABL GAIN	0~+7	+1	←	←	←
20. Y-DL(TV / VIDEO / S)	0~+7	+2 / +4 / +2	+3 / +3 / +4	+4 / +4 / +2	←
21. P.ACL SW	0~+1	+1	←	←	←
22. WPL SW	0~+1	0	←	←	←
23. Y GAMMA	0~+1	0	←	←	←

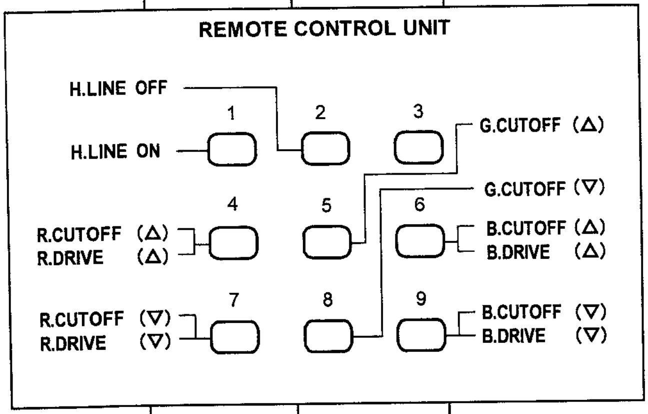
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of WHITE BALANCE (Low light)	● **Signal generator** ● **Remote control unit**		**1. CUT OFF (R)** **CUT OFF (G)** **CUT OFF (B)** **SCREEN VR (IN HVT)**	1. Receive a black and white signal (colour off). 2. Selct **2. V/C** from the SERVICE MENU. 3. Select **1. CUT OFF (R)**, **(G)** and **(B)** with MENU ∇/Δ, and set each value to initial setting value with **4~9** keys of the remote control unit. 4. Press the **1** key of the remote control unit to produce a single horizontal line. 5. Turn the SCREEN VR fully counter-clockwise, then slowly turn it clockwise to where a red, blue and green colour is faintly visible. 6. Use keys **4~9** of the remote control unit and adjust the other 2 colours to where the single horizontal line appears white. 7. Turn the **SCREEN VR** to where the single horizontal line glows faintly. 8. Press the **2** key to return to **1. CUT OFF** screen. 9. Press the DISPLAY key twice to return to the normal screen.



V/C 50Hz PAL

1. CUTOFF (R) * **
(G) * **
(B) * **

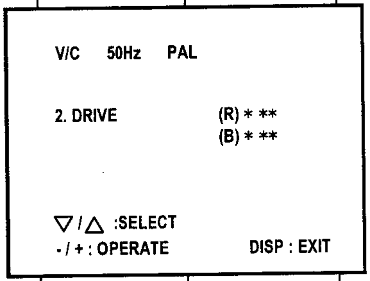
∇/Δ :SELECT
-/+ : OPERATE DISP : EXIT



Setting (Adjustment) item		Variable range	Initial setting value
1. CUT OFF	R	-128~+127	0
	G	-128~+127	0
	B	-128~+127	0

Adjustment of WHITE BALANCE (High light)	● **Signal generator** ● **Remote control unit**		**2. DRIVE (R)** **DRIVE (B)**	1. Receive a black and white signal (colour off). 2. Selct **2. V/C** from the SERVICE MENU. 3. Select **2. DRIVE (R) / (B)** with MENU ∇/Δ, and set each value to initial setting value with **4** and **7** or **6** and **9** keys of the remote control unit. 4. Use the keys **4** and **7** or **6** and **9** to produce a white screen. 5. Press the DISPLAY key twice to return to the normal screen.

Setting (Adjustment) item		Variable range	Initial setting value
2. DRIVE	R	-128~+127	0
	B	-128~+127	0

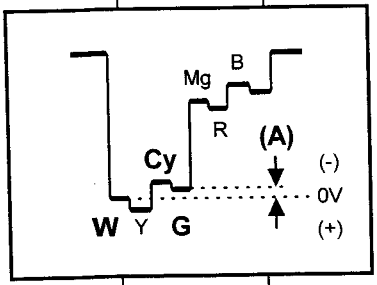


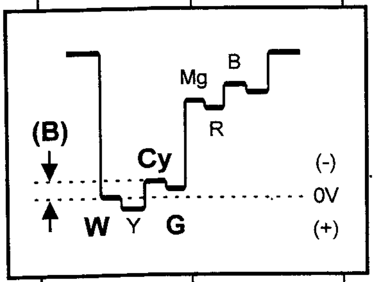
V/C 50Hz PAL

2. DRIVE (R) * **
(B) * **

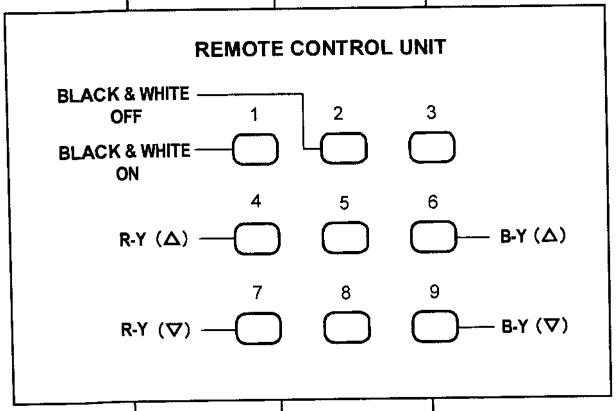
∇/Δ :SELECT
-/+ : OPERATE DISP : EXIT

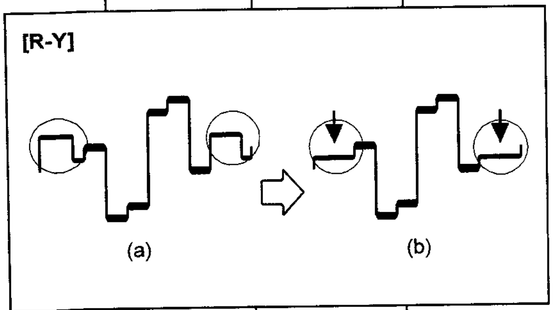
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB BRIGHT	● Remote control unit		3. **BRIGHT**	1. Receive any broadcast. 2. Select **2. V/C** from SERVICE MENU. 3. Select **3. BRIGHT** with the MENU ▽ / △ key. 4. Set the initial setting value with the MENU - or + key. 5. If the brightness is not the best with the initial set value, make fine adjustment until you get the best brightness. 6. Press the DISPLAY key twice to return to the normal screen.
Adjustment of SUB CONT.	● Remote control unit		4. **CONT.**	1. Receive any broadcast. 2. Select **2. V/C** from SERVICE MENU. 3. Select **4. CONT**. with the MENU ▽ / △ key. 4. Set the initial setting value with the MENU - or + key. 5. If the contrast is not the best with the initial set value, make fine adjustment until you get the best contrast. 6. Press the DISPLAY key twice to return to the normal screen.
Adjustment of SUB COLOUR I	● Remote control unit		5. **COLOUR**	**[Method of adjustment without measuring instrment]**
			PAL COLOUR	**(PAL COLOUR)** 1. Receive a PAL broadcast. 2. Select **2. V/C** from the SERVICE MENU. 3. Select **5. COLOUR** with the MENU △ / ▽ key. 4. Set the initial setting value for PAL COLOUR with the MENU - or + key. 5. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour. 6. Press the DISPLAY key twice to return to the normal screen.
			SECAM COLOUR	**(SECAM COLOUR)** 1. Receive a SECAM broadcast. Make fine adjustment of SECAM COLOUR as previously.
			NTSC 3.58 COLOUR	**(NTSC 3.58 COLOUR)** 1. Receive a NTSC 3.58MHz broadcast. 2. Make similar fine adjustment of NTSC 3.58 COLOUR as previously.
				(NTSC 4.43 COLOUR) When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

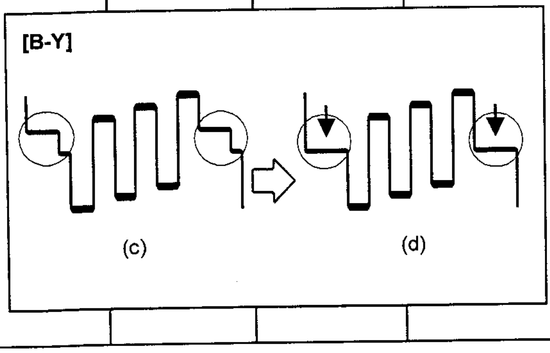
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR-Ⅱ  Mg B R (A) Cy (-) 0V W Y G (+)	**● Signal generator** **● Oscillo-scope** **● Remote control unit**	**TP-47G**	**5. COLOUR**	**[Method of adjustment using measuring instrument]**
		TP-E (⏚) **[CRT SOCKET PWB]**	PAL COLOUR	**(PAL COLOUR)** 1. Receive a PAL full field colour bar signal (75% white). 2. Select **2. V/C** from SERVICE MENU. 3. Select **5. COLOUR** with the MENU ▽ / △ key. 4. Set the initial setting value of PAL COLOUR with the MENU - or + key. 5. Connect the oscilloscope between TP-47G and TP-E. 6. Adjust PAL COLOUR and bring the value of **(A)** in the illustration to +7V (W & G).
			SECAM COLOUR	**(SECAM COLOUR)** 1. Receive a SECAM full field colour bar signal (75% white). 2. Set the initial setting value of SECAM COLOUR with the MENU - or + key. 3. Adjust SECAM COLOUR and bring the value of **(A)** in the illustration to +7V (W & G).
			NTSC 3.58 COLOUR	**(NTSC 3.58 COLOUR)** 1. Receive a NTSC 3.58 full field colour bar signal (75% white). 2. Set the initial setting value of NTSC 3.58 COLOUR with the MENU - or + key. 3. Adjust NTSC 3.58 COLOUR and bring the value of **(A)** in the illustration to +10V (W & G).
				(NTSC 4.43 COLOUR) When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB TINT- I	● **Remote control unit**		**6. TINT**	**[Method of adjustment without measuring instrument]**
			NTSC 3.58 TINT	**(NTSC 3.58 TINT)** 1. Receive a NTSC 3.58 full field colour bar signal (75% white). 2. Select **2. V/C** from SERVICE MENU. 3. Select **6. TINT** with the MENU ▽ / △ key. 4. Set the initial setting value of NTSC 3.58 with the MENU - or + key. 5. If you cannot get the best tint with the initial setting value, make fine adjustment until you get the best tint. 6. Press the DISPLAY key twice to return to the normal screen.
				(NTSC 4.43 COLOUR) When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
Adjustment of SUB TINT- II	● **Signal generator** ● **Oscillo-scope** ● **Remote control unit**	**TP-47G** **TP-E (⏚)** **[CRT SOCKET PWB]**	**6. TINT**	**[Method of adjustment using measuring instrument]**
			NTSC 3.58 TINT	**(NTSC 3.58 TINT)** 1. Receive a NTSC 3.58 full field colour bar signal (75% white). 2. Select **2. V/C** from SERVICE MENU. 3. Select **6. TINT** with the MENU ▽ / △ key. 4. Set the initial setting value of NTSC 3.58 with the MENU - or + key. 5. Connect the oscilloscope between TP-47G and TP-E. 6. Adjust NTSC 3.58 TINT to bring the value of **(B)** in the illustration to +9V (W & Cy).
				**(NTSC 4.43 TINT)** When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of BLACK OFFSET- I (SECAM)	● Remote control unit		7. BLACK OFFSET (R-Y) (B-Y)	**[Method of adjustment without measuring instrument]** 1. Receive a SECAM broadcast. 2. Select **2. V/C** from SERVICE MENU. 3. Select **7. BLACK OFFSET** with the MENU ▽ / △ key. 4. Set the initial setting value for BLACK OFFSET (R-Y) and (B-Y) with **4** and **7** or **6** and **9** keys of the remote control. 5. If the picture is not the best with the initial setting value, make fine adjustment until you get the best picture. 6. Press the DISPLAY key twice to return to the normal screen.
Adjustment of BLACK OFFSET- Ⅱ (SECAM)	● Signal generator ● Oscillo-scope ● Remote control unit	35 PIN (R-Y) 36 PIN (B-Y) IC 201 OF MAIN PWB	7. BLACK OFFSET (R-Y) (B-Y)	**[Method of adjustment using measuring instrument]** 1. Receive a SECAM COLOUR bar signal (full field colour bar 75% white). 2. Select **2. V/C** from SERVICE MENU. 3. Select **7. BLACK OFFSET** with the ▽ / △ key. 4. Connect the oscilloscope between **35** pin of IC 201 and TP-E. 5. By using **4** and **7** keys of the remote control, adjust the BLACK OFFSET (R-Y) so that it becomes the waveform changes from (a) to (b) shown in the figure. 6. Connect the oscilloscope between **36** pin of IC 201 and TP-E. 7. By using **6** and **9** keys of the remote control, adjust the BLACK OFFSET (B-Y) so that it becomes the waveform changes from (c) to (d) shown in the figure. 8. If the picture is not the best with the adjusted picture, make fine adjustment until you get the best picture. 9. Press the DISPLAY key twice to return to the normal screen.





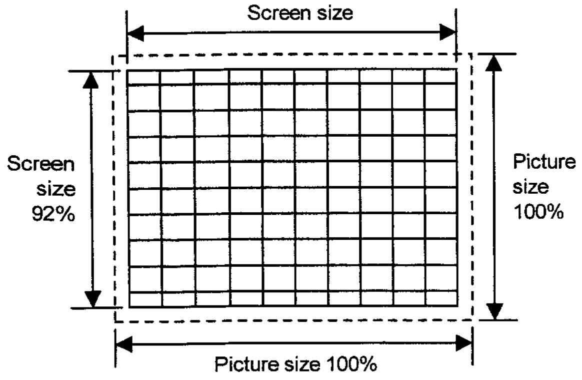


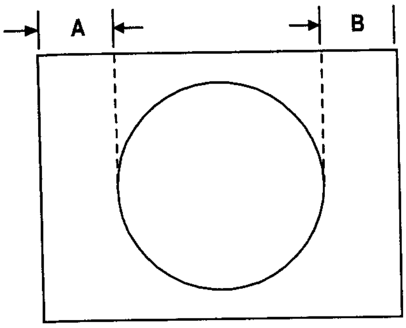
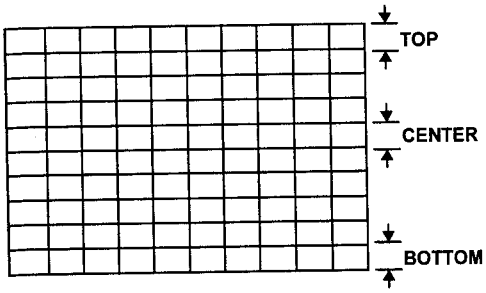
DEFLECTION CIRCUIT ADJUSTMENT

- There are 2modes of adjustment —— ① 50Hz mode and ② 60Hz mode —— depending upon the kind of signals (VERTICAL FREQUENCY 50Hz / 60Hz).
- When adjusted in mode ① , mode ② will be automatically set.

The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.
The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

Setting item	Adjustment name	Variable range	Initial setting value	
			① 50Hz	② 60Hz
2. V-SHIFT [Fixed]	Vertical center	-32~ +31	0 **[Fixed]**	0 **[Fixed]**
3. V-SIZE	Vertical hight	-64~ +63	+5	-1
4. H-CENT	Horizontal center	-16~ +15	-12	-9
7. V-S.CR	Vertical hight correction	-64~ +63	0	+1
10.V-LINE	Vertical linearity	-16~ +15	+1	-2

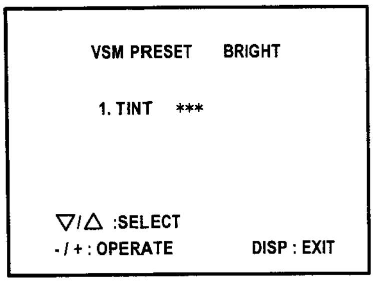
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V-SIZE  Screen size Screen size 92% Picture size 100% Picture size 100%			**3.V-SIZE**	**[① 50Hz mode]** 1. Receive a cross-hatch signal. 2. Select **4. DEF** from SERVICE MENU. 3. Select **3. V-SIZE** with the MENU ▽ / △ key. 4. Set the initial setting value of **3. V-SIZE** with the MENU - / + key. 5. Adjust **3. V-SIZE** and make the vertical screen size 92% of the picture size.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of H-CENTER 			**4.H-CENT**	6. Receive a circle pattern signal 7. Select **4. H- CENT** with the MENU △ / ▽ key. 8. Set the initial setting value of **4. H- CENT** with the MENU - / + key. 9. Adjust **4. H- CENT** to make A=B with the MENU - / + key.
Adjustment of V-S.CR & V.LINE 			**7.V-S.CR** **10.V.LINE**	● When the vertical linearity has been deteriorated remarkably, perform the following steps. 10. Receive a cross-hatch signal. 11. Select **7. V-S.CR** with the MENU▽ / △ key. 12. Set the initial setting value of **7. V-S.CR** with the MENU - / + key. 13. Select **10. V. LINE**. with the MENU ▽ / △ key. 14. Set the initial setting value of **10. V. LINE**. with the MENU - / + key. 15. Adjust **7. V-S.CR** and **10. V.LINE** so that the spaces of each line on TOP, CENTER, and BOTTOM become uniform.
				16. Make sure that the adjustment is properly done on the screen of ② 60Hz mode. ● When adjust in ② 60Hz mode, only 60Hz mode is adjust.

VSM PRESET ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
Setting of VSM PRESET	● **Remote control unit**		1. **TINT** 2. **COLOUR** 3. **BRIGHT** 4. **CONT.** 5. **SHARP**	(VSM PRESET) 1. Select **5. VSM PRESET** from the SERVICE MENU. 2. Select BRIGHT with the PICTURE MODE key. 3. Adjust the MENU △ / ▽ and MENU - or + key to bring the set values of **1. TINT ~ 5. SHARP** to the values shown in the table. 4. Respectively select the VSM PRESET mode for SOFT, and STANDARD, and make similar adjustment as in 3 above.

SUB MENU 5. VSM



VSM PRESET BRIGHT

1. TINT ***

▽/△ :SELECT
-/+ : OPERATE DISP : EXIT

VSM preset mode / VSM Setting item	BRIGHT	STANDARD	SOFT
1. **TINT** SETTING VALUE	0	0	0
2. **COLOUR** SETTING VALUE	0	0	0
3. **BRIGHT** SETTING VALUE	0	0	0
4. **CONT.** SETTING VALUE	+15	+4	-4
5. **SHARP** SETTING VALUE	0	0	-3

SETTING VALUE OF VSM PRESET

AUDIO ADJUSTMENT

- Do not touch 3.AUDIO(1. CONC LIMIT, 2. A2 ID THR, 3. SOUND SYSTEM) of the SERVICE MENU as it requires no adjustment.

3. AUDIO

Setting (adjustment) item	Variable range	Initial setting value (fixed)
1. CONC LIMIT ***(Do not adjust)***	00H~FFH	0AH
2. A2 ID THR ***(Do not adjust)***	00H~FFH	14H
3. SOUND SYSTEM ***(Do not adjust)***	———	———

CENTER ADJUSTMENT

- Do not touch 7.CENTER(TREBLE, BASS) of the SERVICE MENU as it requires no adjustment.

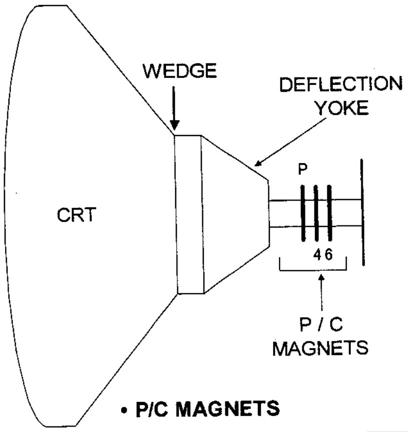
7. CENTER

Setting (adjustment) item	Initial setting value (fixed)
TREBLE ***(Do not adjust)***	0
BASS ***(Do not adjust)***	0

PURITY, CONVERGENCE

PURITY ADJUSTMENT

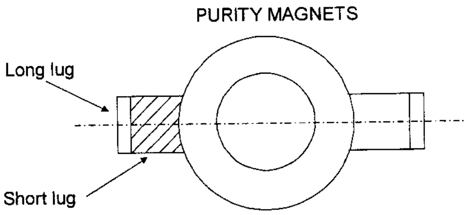
1. Demagnetize CRT with the demagnetizer.
2. Loosen the retainer screw of the deflection yoke.
3. Remove the wedges.
4. Input a green raster signal from the signal generator, and turn the screen to green raster.
5. Move the deflection yoke backward.
6. Bring the long lug of the purity magnets on the short lug and position them horizontally. (Fig.2)
7. Adjust the gap between two lugs so that the GREEN RASTER will come into the center of the screen. (Fig.3)
8. Move the deflection yoke forward, and fix the position of the deflection yoke so that the whole screen will become green.
9. Insert the wedge to the top side of the deflection yoke so that it will not move.
10. Input a crosshatch signal.
11. Verify that the screen is horizontal.
12. Input red and blue raster signals, and make sure that purity is properly adjusted.



- **P/C MAGNETS**

P : PURITY MAGNET
4 : 4 POLES (convergence magnets)
6 : 6 POLES (convergence magnets)

Fig.1



Bring the long lug over the short lug and position them horizontally.

Fig.2

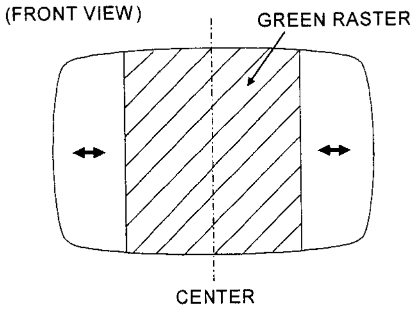


Fig.3

STATIC CONVERGENCE ADJUSTMENT

1. Input a crosshatch signal.
2. Using 4-pole convergence magnets, overlap the red and blue lines in the center of the screen (Fig.1) and turn them to magenta (red/blue).
3. Using 6-pole convergence magnets, overlap the magenta(red/blue) and green lines in the center of the screen and turn them to white.
4. Repeat 2 and 3 above, and make best convergence.

DYNAMIC CONVERGENCE ADJUSTMENT

1. Move the deflection yoke up and down and overlap the lines in the periphery. (Fig. 2)
2. Move the deflection yoke left to right and overlap the lines in the periphery. (Fig. 3)
3. Repeat 1 and 2 above, and make best convergence.

- After adjustment, fix the wedge at the original position.
  Fasten the retainer screw of the deflection yoke.
  Fix the 6 magnets with glue.

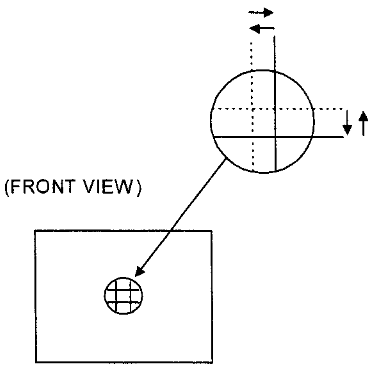


Fig.1

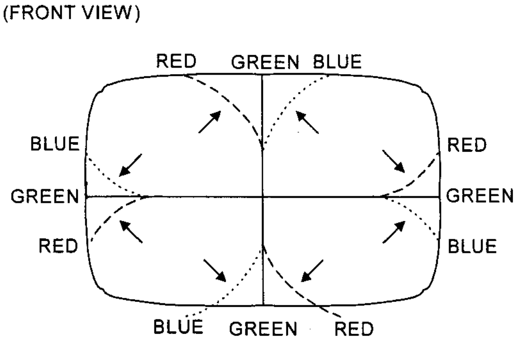

(FRONT VIEW)
RED
GREEN
BLUE
BLUE
GREEN
RED
RED
GREEN
BLUE
BLUE
GREEN
RED

Fig.2

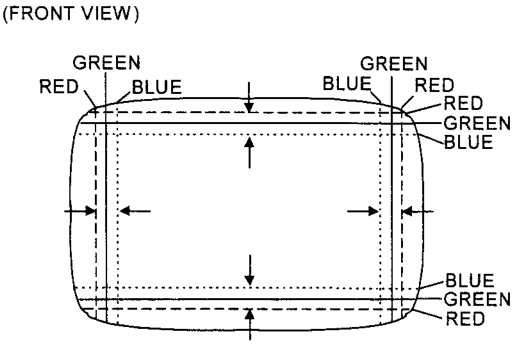

(FRONT VIEW)
GREEN
RED
BLUE
GREEN
BLUE
RED
RED
GREEN
BLUE
BLUE
GREEN
RED

Fig.3

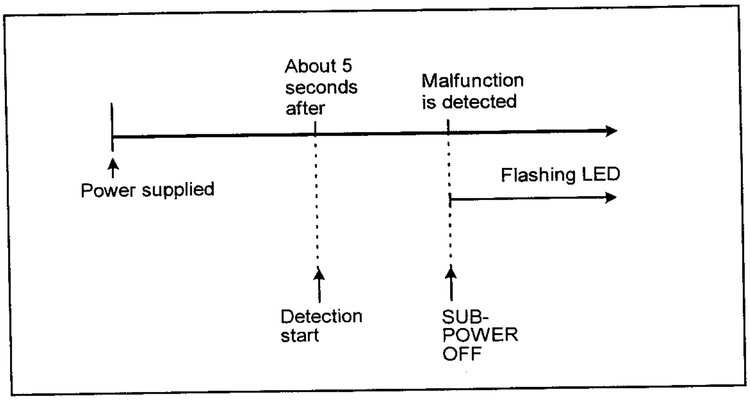
SELF CHECK FUNCTIONS

1. Outline

This model has self check functions for over-current and CRT NECK protection. When an abnormality has been detected, the SUB POWER is turned off and the ON TIMER LED turns on and off to inform of the failure. An abnormality is detected by the signal input state of the control line connected to the main microcomputer.

2. Self check indicating function

When an abnormality has been detected at about 5 seconds after the power is turned on, the SUB POWER is turned off immediately and the ON TIMER LED turns on and off.



[Indication by ON TIMER LED]

Item	LED ON / OFF intervals	Priority detection
① Over-current protection	Turning on and off 0.2 -second intervals	1
② CRT NECK protection	Turning on and off 1 -second intervals	2

NOTE : In case of ① + ②, the item ① is indicated.

3. Self check items

Check item	Details of detection	Method of detection	State of abnormality
Over-current protection	An over-current on the low B line is detected.	The main microcomputer detects the possible abnormality at 30-msecond intervals and judges the results in every 16 time. Of the 16 times, if NG is detected more than 9 times, it is judged that there is an abnormality	When an abnormality has been detected, the SUB-POWER is turned off. While the SUB-POWER is being turned off, the power key of the remote controller is not operational until the power code is taken out and put in again.
CRT NECK protection	Operation of CRT NECK protection circuit.	DITTO	DITTO

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

■ SOLDERING IRON

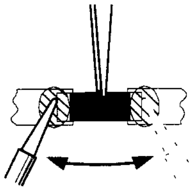
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

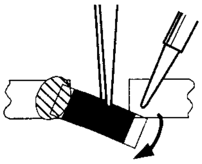
1. How to remove Chip parts

◆ Resistors, capacitors, etc.

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

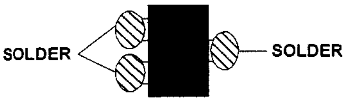


(2) Shift with tweezers and remove the chip part.

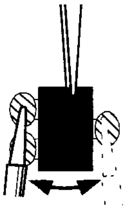


◆ Transistors, diodes, variable resistors, etc.

(1) Apply extra solder to each lead.



(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

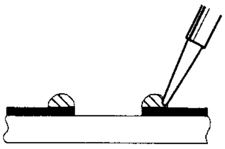


Note : After removing the part, remove remaining solder from the pattern.

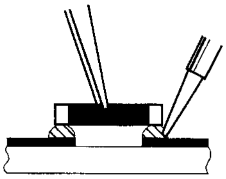
2. How to install Chip parts

◆ Resistors, capacitors, etc.

(1) Apply solder to the pattern as indicated in the figure.

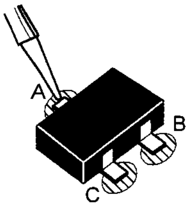


(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

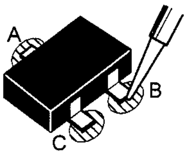


◆ Transistors, diodes, variable resistors, etc.

(1) Apply solder to the pattern as indicated in the figure.
(2) Grasp the chip part with tweezers and place it on the solder.
(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety. Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines —— in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

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AV-K21MS2

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- CRT SOCKET PW BOARD ASS'Y 37
- FRONT CONTROL PW BOARD ASS'Y 37
- IF PW BOARD ASS'Y 38
- AV SW PW BOARD ASS'Y 39

AV-K21MH2

- MAIN PW BOARD ASS'Y **41**
- CRT SOCKET PW BOARD ASS'Y 44
- FRONT CONTROL PW BOARD ASS'Y 44
- IF PW BOARD ASS'Y 44
- AV SW PW BOARD ASS'Y 44

- PACKING / PACKING PARTS LIST 45
- REMOTE CONTROL UNIT PARTS LIST 45

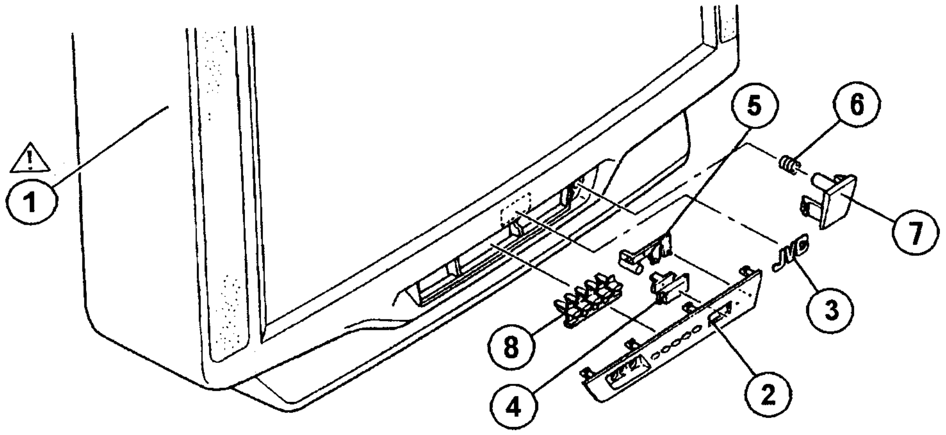
USING P.W. BOARD & REMOTE CONTROL UNIT

Model P.W.B ASS'Y	AV-K21MS2	AV-K21MH2
MAIN P.W.B	SCM-1013A-H2	SCM-1014A-H2
CRT SOCKET P.W.B	SCM-3002A-H2	←
FRONT CONTROL P.W.B	SCM-8002A-H2	←
IF PWB	SCM0F001A-H2	←
AV SW PWB	SCM0Y002A-H2	←
REMOTE CONTROL UNIT	RM-C231-1C	RM-C237-1C

EXPLODED VIEW PARTS LIST I

⚠ Ref. No.	Part No.	Part Name	Description	Local
1	**CM12955-016-H**	**FRONT CABINET**	[AV-K21MS2]	
1	**CM12955-017-H**	**FRONT CABINET**	[AV-K21MH2]	
2	CM12957-009-H	CONTROL WINDOW		
3	CM48147-001-H	JVC MARK		
4	CM36637-D01-H	CDS WINDOW		
5	CM36599-B01-H	LED/RM LENS		
6	CM35235-003-H	SPRING		
7	CM36600-B01-H	POWER KNOB		
8	CM36598-C01-H	CONTROL KNOB		

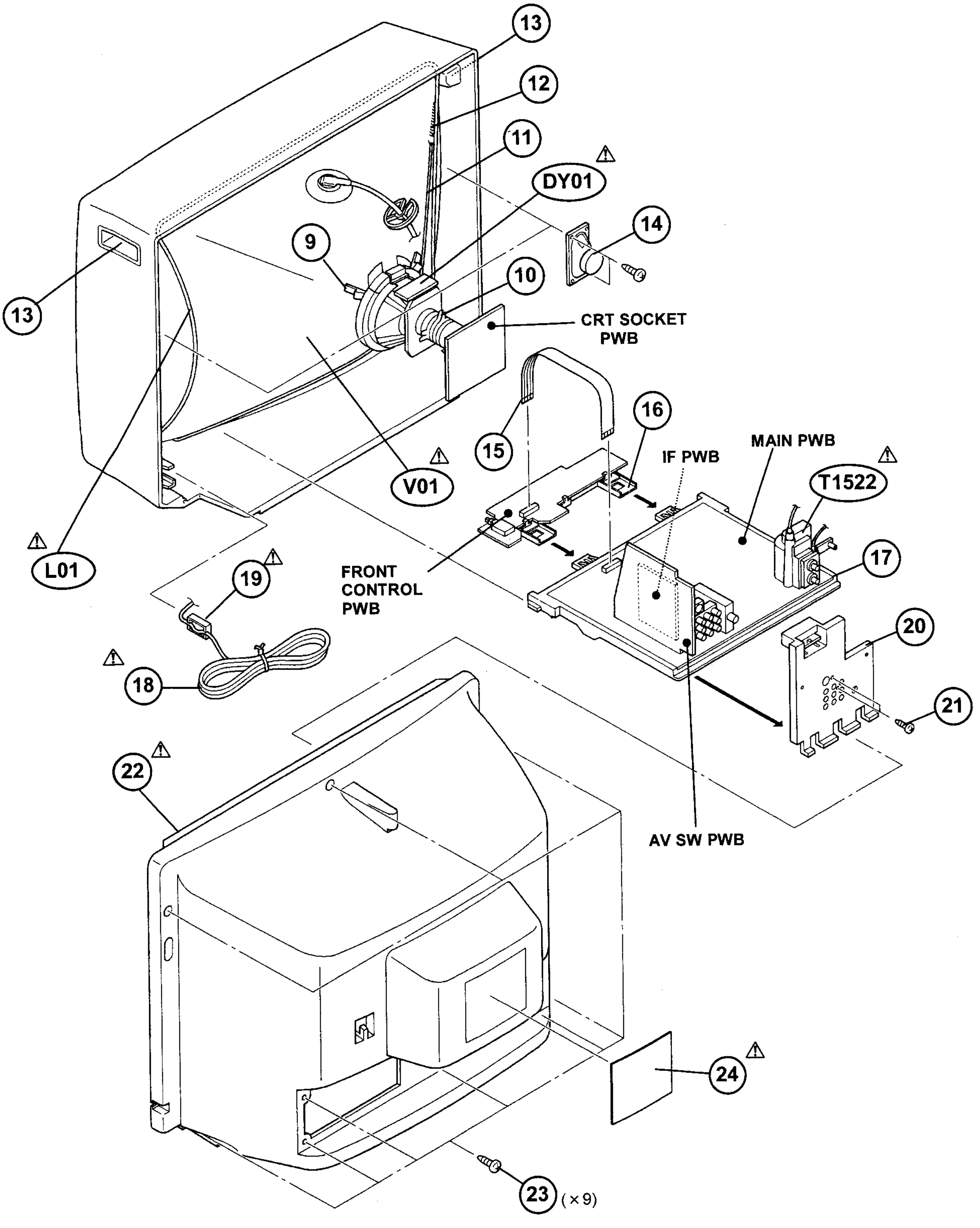
EXPLODED VIEW I



EXPLODED VIEW PARTS LIST Ⅱ

⚠	Ref.No.	Part No.	Part Name	Description	Local
⚠	V01	A51LMV20X	PICTURE TUBE(C)		
⚠	DY01	CE20295-00C	DEF YOKE	DY01	
⚠	L01	CELD029-004J6	DEG. COIL		
⚠	T1522	QQH0022-001	H. V. TRANSF.		
	9	CE40764-00A	WEDGE ASSY	(×3)	
	10	A75034-B	P. C. MAGNET		
	11	CHGB0016-0B-FH	BRAIDED WIRE		
	12	A48457-3-H	SPRING		
	13	CM23142-B01-H	HAND INSULATER	(×2)	
	14	CEBSS12D-04KJ2	SPEAKER	(×2) SP01, SP02	
	15	CHFB125-08BD	FFC WIRE		
	16	CM12965-A02-H	CONTROL BASE		
	17	CM12958-A01-VH	CHASSIS BASE		
⚠	**18**	**QMP40D0-200J5**	**POWER CORD**	**[AV-K21MS2]**	
⚠	**18**	**QMPN050-200-E2**	**POWER CORD**	**[AV-K21MH2]**	
⚠	19	CM47005-A01-H	CORD CLAMP		
	20	CM12976-A01-H	AV TERM BASE		
	21	SBSF3010Z-H	TAPPING SCREW	(×2)	
⚠	22	CM12731-A05-VH	REAR COVER		
	23	GBSF4016Z-H	TAPPING SCREW	(×9)	
⚠	**24**	**CM22925-001**	**RATING LABEL**	**[AV-K21MS2]**	
⚠	**24**	**CM22925-012**	**RATING LABEL**	**[AV-K21MH2]**	

EXPLODED VIEW II


13
12
11
DY01
14
9
10
CRT SOCKET PWB
13
15
16
IF PWB
MAIN PWB
T1522
V01
17
L01
19
FRONT CONTROL PWB
20
18
21
22
AV SW PWB
24
23 (×9)

AV-K21MS2

PRINTED WIRING BOARD PARTS LIST

MAIN P.W. BOARD ASS'Y (SCM-1013A-H2)

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	R1001-04	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1101	QRE141J-473Y	C R	47kΩ 1/4W	J
	R1102	QRE141J-153Y	C R	15kΩ 1/4W	J
	R1103	QRE141J-750Y	C R	75Ω 1/4W	J
	R1151-52	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1153	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1201	QRE141J-562Y	C R	5.6kΩ 1/4W	J
	R1203	QRE141J-224Y	C R	220kΩ 1/4W	J
	R1204-05	QRE141J-391Y	C R	390Ω 1/4W	J
	R1206	QRE141J-332Y	C R	3.3kΩ 1/4W	J
	R1207	QRE141J-101Y	C R	100Ω 1/4W	J
	R1301	QRE141J-681Y	C R	680Ω 1/4W	J
	R1302	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1303	QRE141J-273Y	C R	27kΩ 1/4W	J
	R1304-06	QRE141J-101Y	C R	100Ω 1/4W	J
	R1307-10	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1311	QRE141J-333Y	C R	33kΩ 1/4W	J
	R1313	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1319	QRE141J-333Y	C R	33kΩ 1/4W	J
	R1321-22	QRE141J-101Y	C R	100Ω 1/4W	J
	R1401	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1403	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1421	QRE141J-822Y	C R	8.2kΩ 1/4W	J
	R1422	QRE141J-472Y	C R	4.7kΩ 1/4W	J
	R1423	QRE141J-221Y	C R	220Ω 1/4W	J
	R1425-26	QRE141J-333Y	C R	33kΩ 1/4W	J
	R1427	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1428	QRE141J-822Y	C R	8.2kΩ 1/4W	J
	R1429	QRE141J-562Y	C R	5.6kΩ 1/4W	J
	R1430	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1431	QRE141J-682Y	C R	6.8kΩ 1/4W	J
	R1432	QRE121J-4R7Y	C R	4.7Ω 1/2W	J
	R1433	QRE121J-6R8Y	C R	6.8Ω 1/2W	J
	R1440	QRG01GJ-221	OM R	220Ω 1W	J
	R1444	QRE121J-221Y	C R	220Ω 1/2W	J
	R1445	QRE121J-821Y	C R	820Ω 1/2W	J
	R1446	QRK126J-1R0X	C R	1.0Ω 1/2W	J
	R1451	QRE141J-272Y	C R	2.7kΩ 1/4W	J
	R1452	QRE141J-563Y	C R	56kΩ 1/4W	J
	R1453	QRE141J-183Y	C R	18kΩ 1/4W	J
	R1454	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1501	QRE141J-822Y	C R	8.2kΩ 1/4W	J
	R1502	QRE141J-621Y	C R	620Ω 1/4W	J
	R1504	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1505	QRE141J-104Y	C R	100kΩ 1/4W	J
	R1522	QRE141J-123Y	C R	12kΩ 1/4W	J
	R1523	QRE121J-222Y	C R	2.2kΩ 1/2W	J
	R1524-25	QRG029J-332	OM R	3.3kΩ 2W	J
	R1526	QRE121J-220Y	C R	22Ω 1/2W	J
	R1527	QRG029J-123	OM R	12kΩ 2W	J
	R1528	QRE121J-471Y	C R	470Ω 1/2W	J
	R1582	QRE141J-822Y	C R	8.2kΩ 1/4W	J
	R1583	QRE141J-123Y	C R	12kΩ 1/4W	J
	R1594	QRE141J-332Y	C R	3.3kΩ 1/4W	J
	R1651	QRE141J-182Y	C R	1.8kΩ 1/4W	J
	R1652	QRE141J-122Y	C R	1.2kΩ 1/4W	J
	R1653	QRE141J-182Y	C R	1.8kΩ 1/4W	J
	R1654	QRE141J-122Y	C R	1.2kΩ 1/4W	J
	R1655	QRE141J-104Y	C R	100kΩ 1/4W	J
	R1670	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1672-73	QRE141J-181Y	C R	180Ω 1/4W	J
	R1674-75	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1690-91	QRE121J-4R7Y	C R	4.7Ω 1/2W	J
	R1692-93	QRE141J-561Y	C R	560Ω 1/4W	J
	R1701	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1703-04	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1705-08	QRE141J-221Y	C R	220Ω 1/4W	J
	R1709	QRE141J-682Y	C R	6.8kΩ 1/4W	J
	R1710	QRB089J-682	NETW.R	6.8kΩ	
	R1711	QRE141J-473Y	C R	47kΩ 1/4W	J
	R1712	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1713-14	QRE141J-332Y	C R	3.3kΩ 1/4W	J
	R1715	QRE141J-221Y	C R	220Ω 1/4W	J
	R1720	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1721	QRE141J-392Y	C R	3.9kΩ 1/4W	J
	R1722	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1723	QRE141J-392Y	C R	3.9kΩ 1/4W	J
	R1724	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1725	QRE141J-392Y	C R	3.9kΩ 1/4W	J
	R1727	QRE141J-472Y	C R	4.7kΩ 1/4W	J
	R1729	QRE141J-124Y	C R	120kΩ 1/4W	J
	R1730	QRE141J-683Y	C R	68kΩ 1/4W	J
	R1731	QRE141J-563Y	C R	56kΩ 1/4W	J
	R1732	QRE141J-223Y	C R	22kΩ 1/4W	J
	R1733-34	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1735	QRE141J-153Y	C R	15kΩ 1/4W	J
	R1736	QRE141J-153Y	C R	15kΩ 1/4W	J
	R1737	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1738	QRE141J-821Y	C R	820Ω 1/4W	J
	R1739	QRE141J-471Y	C R	470Ω 1/4W	J
	R1740-44	QRE141J-221Y	C R	220Ω 1/4W	J
	R1745	QRE141J-101Y	C R	100Ω 1/4W	J
	R1747-49	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1752	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1755-57	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1761	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1762	QRE141J-331Y	C R	330Ω 1/4W	J
	R1764	QRE141J-472Y	C R	4.7kΩ 1/4W	J
	R1765-66	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1770	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1771	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1801	QRE141J-471Y	C R	470Ω 1/4W	J
	R1802	QRE141J-392Y	C R	3.9kΩ 1/4W	J
	R1803	QRE141J-561Y	C R	560Ω 1/4W	J
	R1804	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1805	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1806	QRE141J-152Y	C R	1.5kΩ 1/4W	J
	R1807	QRE141J-333Y	C R	33kΩ 1/4W	J
	R1808	QRE141J-182Y	C R	1.8kΩ 1/4W	J
	R1809	QRE141J-181Y	C R	180Ω 1/4W	J
	R1810	QRE141J-182Y	C R	1.8kΩ 1/4W	J
	R1811	QRE141J-181Y	C R	180Ω 1/4W	J
	R1812	QRE141J-182Y	C R	1.8kΩ 1/4W	J
	R1813	QRE141J-181Y	C R	180Ω 1/4W	J
	R1814	QRE141J-122Y	C R	1.2kΩ 1/4W	J
	R1815	QRE141J-561Y	C R	560Ω 1/4W	J
	R1816-17	QRE141J-122Y	C R	1.2kΩ 1/4W	J
⚠	R1901	QRF104K-3R9	UNF R	3.9 Ω 10W	K
	R1902	QRL039J-683	OM R	68kΩ 3W	J
	R1921	QRE121J-681Y	C R	680Ω 1/2W	J
	R1922	QRM059J-R22	MP R	0.22 Ω 5W	J
	R1923	QRX029J-2R2	MF R	2.2 Ω 2W	J
	R1924	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1925	QRE121J-102Y	C R	1kΩ 1/2W	J
	R1926	QRE121J-152Y	C R	1.5kΩ 1/2W	J
	R1928	QRL039J-473	OM R	47kΩ 3W	J
	R1929	QRE121J-332Y	C R	3.3kΩ 1/2W	J
	R1930	QRL039J-473	OM R	47kΩ 3W	J
	R1932	QRE121J-824Y	C R	820kΩ 1/2W	J
	R1934	QRN141J-333Y	C R	33kΩ 1/4W	J
	R1935	QRE141J-152Y	C R	1.5kΩ 1/4W	J
	R1936	QRK129J-3R9	C R	3.9Ω 1/2W	J

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	R1941	QRE121J-152Y	C R	1.5kΩ 1/2W J	
	R1943	QRE141J-472Y	C R	4.7kΩ 1/4W J	
	R1944	QRE121J-332Y	C R	3.3kΩ 1/2W J	
	R1946	QRE141J-153Y	C R	15kΩ 1/4W J	
	R1971	QRE141J-223Y	C R	22kΩ 1/4W J	
	R1972	QRE121J-152Y	C R	1.5kΩ 1/2W J	
	R1973	QRE141J-223Y	C R	22kΩ 1/4W J	
	R1974	QRE141J-332Y	C R	3.3kΩ 1/4W J	
	R1975	QRE141J-123Y	C R	12kΩ 1/4W J	
	R1977	QRG029J-183	OM R	18kΩ 2W J	
	R1978	QRE121J-152Y	C R	1.5kΩ 1/2W J	
	R1980	QRE141J-821Y	C R	820Ω 1/4W J	
	R1981	QRE141J-222Y	C R	2.2kΩ 1/4W J	
	R1982	QRE141J-822Y	C R	8.2kΩ 1/4W J	
	R1984	QRL039J-330	OM R	33Ω 3W J	
⚠	R1991	QRZ0057-825	C R	8.2MΩ 1W J	

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	C1001	QETC1HM-475Z	E CAP.	4.7µF 50V M	
	C1002	QETC1CM-108Z	E CAP.	1000µF 16V M	
	C1003	QETC1HM-106Z	E CAP.	10µF 50V M	
	C1004	QETC1CM-107Z	E CAP.	100µF 16V M	
	C1005-07	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1015	QCB31HK-222Z	C CAP.	2200pF 50V K	
	C1151	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1201	QETC1CM-107Z	E CAP.	100µF 16V M	
	C1202	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1203	QETC1HM-105Z	E CAP.	1µF 50V M	
	C1204	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1205	QETC1HM-475Z	E CAP.	4.7µF 50V M	
	C1206	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1207	QETC1CM-107Z	E CAP.	100µF 16V M	
	C1208	QETC1CM-227Z	E CAP.	220µF 16V M	
	C1209	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1210	QETC1HM-106Z	E CAP.	10µF 50V M	
	C1212	QETN1HM-106Z	E CAP.	10µF 50V M	
	C1301	QFLC1HJ-823Z	M CAP.	0.082µF 50V J	
	C1302	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1303	QDC31HJ-120Z	C CAP.	12pF 50V J	
	C1304-06	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1307	QETC1HM-225Z	E CAP.	2.2µF 50V M	
	C1308	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1309	QETC1HM-475Z	E CAP.	4.7µF 50V M	
	C1310	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1311	QETC1CM-477Z	E CAP.	470µF 16V M	
	C1312	QETC1CM-227Z	E CAP.	220µF 16V M	
	C1313-15	QETC1HM-105Z	E CAP.	1µF 50V M	
	C1317	QCS31HJ-470Z	C CAP.	47pF 50V J	
	C1321-22	QCS31HJ-101Z	C CAP.	100pF 50V J	
	C1402	QEM61HK-225Z	E CAP.	2.2µF 50V K	
	C1403	QETC1HM-105Z	E CAP.	1µF 50V M	
	C1420	QFN31HJ-182Z	M CAP.	1800pF 50V J	
	C1421	QFN31HJ-102Z	M CAP.	1000pF 50V J	
	C1423	QFLC2AJ-393Z	M CAP.	0.039µF 100V J	
	C1427	QETN1VM-107Z	E CAP.	100µF 35V M	
	C1428	QETC1VM-107Z	E CAP.	100µF 35V M	
	C1430	QFN32AJ-102Z	M CAP.	1000pF 100V J	
	C1431	QCB31HK-221Z	C CAP.	220pF 50V K	
	C1432	QCB32HK-221Z	C CAP.	220pF 500V K	
	C1433	QETC1HM-475Z	E CAP.	4.7µF 50V M	
	C1435	QETB1EM-108	E CAP.	1000µF 25V M	
	C1436	QFV71HJ-334Z	MF CAP.	0.33µF 50V J	
	C1451	QETC1HM-106Z	E CAP.	10µF 50V M	
	C1501	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1502	QETC1HM-105Z	E CAP.	1µF 50V M	
	C1503	QETM1CM-228	E CAP.	2200µF 16V M	
	C1504-06	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1507	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1508	QETC1AM-107Z	E CAP.	100µF 10V M	
	C1509	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1521	QCB32HK-151Z	C CAP.	150pF 500V K	
	C1522	QCB32HK-102Z	C CAP.	1000pF 500V K	
	C1523	QEHC2CM-105Z	E CAP.	1µF 160V M	
⚠	C1524	QFZ0152-8601	MPP CAP.	8600pF1.5kVH±2.5%	

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
⚠	C1527	QFZ0151-474	MPP CAP.	0.47µF 200V ±3%	
	C1529	QETC2EM-475Z	E CAP.	4.7µF 250V M	
	C1530	QCB32HK-561Z	C CAP.	560pF 500V K	
	C1551	QCB32HK-152Z	C CAP.	1500pF 500V K	
	C1552	QETM1VM-108	E CAP.	1000µF 35V M	
	C1557	QETC2EM-475Z	E CAP.	4.7µF 250V M	
	C1581	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1651-52	QENC1EM-106Z	BP E CAP.	10µF 25V M	
	C1653	QETC1EM-227Z	E CAP.	220µF 25V M	
	C1670-71	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1673-74	QCS31HJ-221Z	C CAP.	220pF 50V J	
	C1677-78	QETC1EM-107Z	E CAP.	100µF 25V M	
	C1681	QETM1EM-228	E CAP.	2200µF 25V M	
	C1682-83	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1684-85	QETB1EM-108	E CAP.	1000µF 25V M	
	C1686-87	QETC1CM-476Z	E CAP.	47µF 16V M	
	C1701	QETC1CM-227Z	E CAP.	220µF 16V M	
	C1702	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1703	QETN1CM-107Z	E CAP.	100µF 16V M	
	C1704	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1705	QETC1AM-107Z	E CAP.	100µF 10V M	
	C1707	QETC1HM-106Z	E CAP.	10µF 50V M	
	C1710	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1711	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1712	QETC1AM-107Z	E CAP.	100µF 10V M	
	C1713	QCS31HJ-271Z	C CAP.	270pF 50V J	
	C1714	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1715	QFLC1HJ-473Z	M CAP.	0.047µF 50V J	
	C1718	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1719	QCB31HK-102Z	C CAP.	1000pF 50V K	
	C1724	QDC31HJ-680Z	C CAP.	68pF 50V J	
	C1725	QDC31HJ-560Z	C CAP.	56pF 50V J	
	C1726	QCS31HJ-101Z	C CAP.	100pF 50V J	
	C1727	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1728-29	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1730	QCS31HJ-181Z	C CAP.	180pF 50V J	
	C1731	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1732	QETN1HM-106Z	E CAP.	10µF 50V M	
	C1771	QCB31HK-102Z	C CAP.	1000pF 50V K	
	C1801	QETC1CM-476Z	E CAP.	47µF 16V M	
	C1802	QCS31HJ-331Z	C CAP.	330pF 50V J	
	C1803	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1804	QCS31HJ-271Z	C CAP.	270pF 50V J	
	C1805-06	QDC31HJ-150Z	C CAP.	15pF 50V J	
	C1807	QETC1AM-107Z	E CAP.	100µF 10V M	
	C1808	QCB31HK-102Z	C CAP.	1000pF 50V K	
	C1810	QETC1AM-107Z	E CAP.	100µF 10V M	
	C1811	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1812	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1813	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1814	QETC1CM-226Z	E CAP.	22µF 16V M	
	C1815	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1816-18	QCB31HK-103Z	C CAP.	0.01µF 50V K	
⚠	C1902	QFZ9040-104	MF CAP.	0.1µFAC275V M	
⚠	C1903	QFZ9040-473	MF CAP.	0.047µFAC275V M	
⚠	C1904	QCZ9085-102	C CAP.	1000pFAC400V P	
⚠	C1905	QCZ9085-102	C CAP.	1000pFAC400V P	
⚠	C1906	QCZ9085-102	C CAP.	1000pFAC400V P	
⚠	C1907	QCZ9085-102	C CAP.	1000pFAC400V P	
⚠	C1909	QEZ0199-227	E CAP.	220µF 400V M	
	C1921	QCZ0122-391	C CAP.	390pF 2000V K	
	C1922	QCS31HJ-471Z	C CAP.	470pF 50V J	
	C1924	QETC1VM-107Z	E CAP.	100µF 35V M	
	C1925	QFN31HJ-102Z	M CAP.	1000pF 50V J	
	C1926	QFN31HJ-182Z	M CAP.	1800pF 50V J	
	C1929	QCZ0334-103	C CAP.		
	C1930	QCZ0122-221	C CAP.	220pF 2000V K	
	C1932	QCZ0122-391	C CAP.	390pF 2000V K	
	C1941	QCZ0325-561	C CAP.	560pF 2000V K	
⚠	C1942	QEZ0203-107	E CAP.	100µF 160V M	
	C1943	QEZ0203-107	E CAP.	100µF 160V M	
	C1945	QETB1EM-108	E CAP.	1000µF 25V M	
	C1946	QCB32HK-561Z	C CAP.	560pF 500V K	
	C1948	QETM1VM-108	E CAP.	1000µF 35V M	
	C1949	QCB31HK-471Z	C CAP.	470pF 50V K	

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	C1950	QFLC1HJ-104Z	M CAP.	0.1µF 50V	J
	C1952	QETN1CM-108Z	E CAP.	1000µF 16V	M
	C1971	QETC1HM-106Z	E CAP.	10µF 50V	M
	C1972	QETC1CM-477Z	E CAP.	470µF 16V	M
	C1973	QETN1EM-107Z	E CAP.	100µF 25V	M
	C1974	QETN1EM-476Z	E CAP.	47µF 25V	M
	C1975	QETN1CM-107Z	E CAP.	100µF 16V	M
	C1976	QETC1CM-107Z	E CAP.	100µF 16V	M
	C1977	QETN1CM-108Z	E CAP.	1000µF 16V	M
	C1978	QETC1AM-107Z	E CAP.	100µF 10V	M
⚠	C1991	QCZ9079-471	C CAP.	470pFAC250V	K
⚠	C1992	QCZ9079-471	C CAP.	470pFAC250V	K
⚠	C1993	QCZ9079-222	C CAP.	2200pFAC250V	M

TRANSFORMER

⚠	Symbol No.	Part No.	Part Name	Description	Local
	T1521	CE42034-001	H.DRIVE TRANSF.		
⚠	T1522	QQH0022-001	H.V.TRANSF.		
⚠	T1921	CETS101-001JD	SWITCH.TRANSF.		

COIL

⚠	Symbol No.	Part No.	Part Name	Description	Local
	L1001	QQL05BK-8R2Z	COIL	8.2µH	K
	L1201	QQL05BK-4R7Z	COIL	4.7µH	K
	L1301-02	QQL244K-470Z	COIL	47µH	K
	L1522	CE42104-001	LINEARITY COIL		
	L1551	QQLZ018-220	HEATER CHOKE		
	L1701	QQL244K-8R2Z	COIL	8.2µH	K
	L1702	QQL244K-5R6Z	COIL	5.6µH	K
	L1703	QQL244K-100Z	COIL	10µH	K
	L1941-43	QQL42AK-820Z	COIL	82µH	K

DIODE

⚠	Symbol No.	Part No.	Part Name	Description	Local
	D1001	MTZJ33A-T2	ZENER DIODE		
	D1203	1SS133-T2	SI.DIODE		
	D1421	1SS133-T2	SI.DIODE		
	D1422	MTZJ75-T2	ZENER DIODE		
	D1423	1SR124-400A-T2	SI.DIODE		
	D1427	MTZJ75-T2	ZENER DIODE		
	D1428	MTZJ6.8A-T2	ZENER DIODE		
	D1452	MTZJ22B-T2	ZENER DIODE		
	D1453	1SS133-T2	SI.DIODE		
	D1501	MTZJ9.1C-T2	ZENER DIODE		
	D1523	RGP10J-5025-T3	SI.DIODE		
	D1551	RU3AM-LFC4	SI.DIODE		
	D1553	RH1S-T3	SI.DIODE		
	D1582	RGP10J-5025-T3	SI.DIODE		
	D1701-03	1SS133-T2	SI.DIODE		
	D1706-10	MTZJ8.2B-T2	ZENER DIODE		
	D1713	1SS133-T2	SI.DIODE		
	D1716-17	1SS133-T2	SI.DIODE		
⚠	D1901	D3SBA60	DIODE BRIDGE		
	D1921	1SR124-400A-T2	SI.DIODE		
	D1922	1SS133-T2	SI.DIODE		
	D1923	MTZJ15A-T2	ZENER DIODE		
	D1924	1SS133-T2	SI.DIODE		
	D1926	EG1A-T3	SI.DIODE		
	D1927	MTZJ6.8A-T2	ZENER DIODE		
	D1929	MTZJ15A-T2	ZENER DIODE		
	D1941	RU3AM-LFC4	SI.DIODE		
	D1942-43	RU3YX-LFC4	SI.DIODE		
	D1944	MTZJ6.2B-T2	ZENER DIODE		
	D1945	RGP10J-5025-T3	SI.DIODE		
	D1946	1SR124-400A-T2	SI.DIODE		
	D1981-84	1SS133-T2	SI.DIODE		
	D1986	MTZJ4.7A-T2	ZENER DIODE		

TRANSISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	Q1151	2SC1740S/QR/-T	SI.TRANSISTOR		
	Q1201	2SA933AS/QR/-T	SI.TRANSISTOR		
	Q1422-24	2SC1740S/QR/-T	SI.TRANSISTOR		
	Q1451-52	2SC1815/YG/-T	SI.TRANSISTOR		
	Q1521	BSN274	F.E.T.		
⚠	Q1522	2SD1878-YD	SI.TRANSISTOR	H.OUT	
	Q1651-52	DTC323TS-T	DIGI.TRANSISTOR		
	Q1653	2SA933AS/QR/-T	SI.TRANSISTOR		

TRANSISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	Q1701	2SA933AS/QR/-T	SI.TRANSISTOR		
	Q1702-03	2SC1740S/QR/-T	SI.TRANSISTOR		
	Q1801-02	2SC1740S/QR/-T	SI.TRANSISTOR		
	Q1921	2SA933AS/QR/-T	SI.TRANSISTOR		
	Q1941	2SC1740S/QR/-T	SI.TRANSISTOR		
	Q1942	DTC144GSA-T	DIGI.TRANSISTOR		
	Q1971	2SA966/OY/-T	SI.TRANSISTOR		
	Q1972	DTC144GSA-T	DIGI.TRANSISTOR		
	Q1973	2SA966/OY/-T	SI.TRANSISTOR		
	Q1974	DTC144GSA-T	DIGI.TRANSISTOR		
	Q1981	2SA933AS/QR/-T	SI.TRANSISTOR		

IC

⚠	Symbol No.	Part No.	Part Name	Description	Local
	IC1201	TB1227BN	I.C.(DIGI-OTHER)		
	IC1421	LA7840	I.C.(MONO-ANA)		
	IC1681	LA4446	I.C.(MONO-ANA)		
	IC1701	M37204MC-D40SP	I C		
	IC1702	AT24C08-K29MS5	I.C.	SERVICE	
	IC1703	L78LR05E-MA	I.C.(MONO-ANA)		
	IC1801	CF72306	I.C.(DIGI-MOS)		
	IC1802	CF70211	I.C.(DIGI-MOS)		
⚠	IC1921	STR-F6654	I.C.(HYBRID)		
⚠	IC1941	S1854-C2	I.C.(MONO-ANA)		
	IC1971	AN7812F	I.C.(MONO-ANA)		
	IC1972	AN7809F	I.C.(MONO-ANA)		
	IC1973	PQ05RF11	I.C.(HYBRID)		
	IC1974	AN78L05-T	I.C.(MONO-ANA)		

OTHERS

⚠	Symbol No.	Part No.	Part Name	Description	Local
		CEMG002-001Z	FUSE CLIP		
	CL1002	CHJ2040-052-FS	WIRE CLAMP		
	CN1002	CHC108N-25T-A	FFC CONNECTOR		
⚠	CP1942	ICP-N75-Y	I.C.PROTECT		
⚠	CP1943	ICP-N75-Y	I.C.PROTECT		
⚠	CP1944	ICP-N5-Y	I.C.PROTECT		
⚠	CP1945	ICP-N75-Y	I.C.PROTECT		
	EF1201	CE42142-222Z	EMI FILTER		
⚠	F1901	QMF51E2-3R15J4	FUSE	3.15A	
⚠	FR1551	QRZ9017-4R7	FUSI.RESISTOR	4.7 Ω 1/4W	J
⚠	FR1552	QRZ9021-1R0	FUSI.RESISTOR	1.0 Ω 1W	J
⚠	FR1554	QRZ9017-150	FUSI.RESISTOR	15 Ω 1/4W	J
	K1002	CE41433-001Z	BEADS CORE		
	K1201	CE41433-001Z	BEADS CORE		
	K1421	CE41433-001Z	BEADS CORE		
	K1501	CE41433-001Z	BEADS CORE		
	K1801-02	CE41433-001Z	BEADS CORE		
	K1921	CE41433-001Z	BEADS CORE		
	K1923	CE41433-001Z	BEADS CORE		
	K1941-44	CE42050-001Z	CORE		
	K1945	CE41433-001Z	BEADS CORE		
⚠	LF1902	QQR0527-002	LINE FILTER		
⚠	PC1921	TLP721F(GR)	I.C.(PH.COUPLER)		
	S1401	QSL4A13-C02	LEVER SWITCH		
⚠	TH1901	QAD0101-9R0	P.THERMISTOR		
	TU1001	CEEM574-B01	TUNER		
⚠	VA1901	ERZV10V621CS	VARISTOR		
	X1301	QAX0354-001	CRYSTAL		
	X1701	CST8.00MTW	CER.RESONATOR		
	X1801	CE41257-001Z	CRYSTAL		
	Y1201	CE41433-001Z	BEADS CORE		

CRT SOCKET P.W. BOARD ASS'Y

(SCM-3002A-H2)

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	R3351-53	NRSA02J-151X	MG R	150Ω 1/10W	J
	R3354	QRL029J-123	OM R	12kΩ 2W	J
	R3355	QRE121J-272Y	C R	2.7kΩ 1/2W	J
	R3356	QRE121J-331Y	C R	330Ω 1/2W	J
	R3357	QRL029J-123	OM R	12kΩ 2W	J
	R3358	QRE121J-272Y	C R	2.7kΩ 1/2W	J
	R3359	QRE121J-331Y	C R	330Ω 1/2W	J
	R3360	QRL029J-123	OM R	12kΩ 2W	J
	R3361	QRE121J-272Y	C R	2.7kΩ 1/2W	J
	R3362	QRE121J-331Y	C R	330Ω 1/2W	J
	R3363	QRZ0107-152Z	C R	1.5kΩ 1/2W	K
	R3364	NRSA02J-182X	MG R	1.8kΩ 1/10W	J
	R3365	NRSA02J-101X	MG R	100Ω 1/10W	J
	R3366	QRZ0107-152Z	C R	1.5kΩ 1/2W	K
	R3367	NRSA02J-101X	MG R	100Ω 1/10W	J
	R3368	QRZ0107-152Z	C R	1.5kΩ 1/2W	K
	R3369	NRSA02J-101X	MG R	100Ω 1/10W	J
	R3370	QRE121J-104Y	C R	100kΩ 1/2W	J
	R3372	NRSA02J-152X	MG R	1.5kΩ 1/10W	J
	R3373	QRE121J-104Y	C R	100kΩ 1/2W	J

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	C3351	QETC1CM-107Z	E CAP.	100µF 16V	M
	C3353	QCB31HK-331Z	C CAP.	330pF 50V	K
	C3355	QCB31HK-331Z	C CAP.	330pF 50V	K
	C3357	QCB31HK-391Z	C CAP.	390pF 50V	K
	C3359	QFZ0097-223	MM CAP.	0.022µF 1250V	K
	C3361	QFZ0097-223	MM CAP.	0.022µF 1250V	K

COIL

⚠	Symbol No.	Part No.	Part Name	Description	Local
	L3351-53	QQL244K-820Z	COIL	82µH	K

DIODE

⚠	Symbol No.	Part No.	Part Name	Description	Local
	D3351	MA3047/H/-X	ZENER DIODE		
	D3352	1SS353-X	SI.DIODE		
	D3353	MA3047/H/-X	ZENER DIODE		
	D3354	1SS353-X	SI.DIODE		
	D3355	MA3047/H/-X	ZENER DIODE		
	D3356	1SS353-X	SI.DIODE		

TRANSISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	Q3351-53	2SC2371/MLK/	SI.TRANSISTOR		

OTHERS

⚠	Symbol No.	Part No.	Part Name	Description	Local
⚠	SK3351	CE42446-001	C.R.T.SOCKET		

FRONT CONTROL P.W. BOARD ASS'Y

(SCM-8002A-H2)

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	R8001	NRSA02J-332X	MG R	3.3kΩ 1/10W	J
	R8002	NRSA02J-561X	MG R	560Ω 1/10W	J
	R8003	NRSA02J-682X	MG R	6.8kΩ 1/10W	J
	R8005	NRSA02J-332X	MG R	3.3kΩ 1/10W	J
	R8006	NRSA02J-682X	MG R	6.8kΩ 1/10W	J
	R8007	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R8008	NRSA02J-332X	MG R	3.3kΩ 1/10W	J
	R8010	NRSA02J-153X	MG R	15kΩ 1/10W	J
	R8011	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R8012	NRSA02J-822X	MG R	8.2kΩ 1/10W	J
	R8015	NRSA02J-224X	MG R	220kΩ 1/10W	J
	R8020	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R8022	NRSA02J-681X	MG R	680Ω 1/10W	J
	R8401	NRSA02J-221X	MG R	220Ω 1/10W	J
	R8402	NRSA02J-820X	MG R	82Ω 1/10W	J
	R8403	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R8404	NRSA02J-224X	MG R	220kΩ 1/10W	J
	R8405	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R8406	NRSA02J-224X	MG R	220kΩ 1/10W	J

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	C8010	QETC1HM-106Z	E CAP.	10µF 50V	M
	C8015	QETC1CM-476Z	E CAP.	47µF 16V	M
	C8016	NCF21EZ-104X	C CAP.	0.1µF 25V	Z
	C8403	QETC1HM-106Z	E CAP.	10µF 50V	M
	C8404-05	QETC1HM-105Z	E CAP.	1µF 50V	M

DIODE

⚠	Symbol No.	Part No.	Part Name	Description	Local
	D8002	SLR-342DU-T16	L.E.D.(ORG)		
	D8004	SLR-342VR-T16	L.E.D.		
	D8005	P1201	C.D.S.		
	D8006-07	MA111-X	SI.DIODE		
	D8402-03	MA3100/M/-X	ZENER DIODE		
	D8405	MA3100/M/-X	ZENER DIODE		

TRANSISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	Q8001	DTC124EKA-X	DIGI.TRANSISTOR		
	Q8005	2SC2412K/QR/-X	SI.TRANSISTOR		
	Q8006	DTC124EKA-X	DIGI.TRANSISTOR		

IC

⚠	Symbol No.	Part No.	Part Name	Description	Local
	IC8001	PIC-21043SR	IFR DETECT UNIT		

OTHERS

⚠	Symbol No.	Part No.	Part Name	Description	Local
		CM35921-A04-H	CDS HOLDER		
		LC30114-001C-H	L.E.D.HOLDER		
	CN8002	CHC108N-25T-A	FFC CONNECTOR		
	J8003	CEMN065-001	PIN JACK		
	J8004	CEMN072-002	PIN JACK		
	J8005	CEMN072-003	PIN JACK		
	S8002	QSP1A11-C18Z	PUSH SWITCH		CH+
	S8004	QSP1A11-C18Z	PUSH SWITCH		CH-
	S8005	QSP1A11-C18Z	PUSH SWITCH		VOL+
	S8006	QSP1A11-C18Z	PUSH SWITCH		MENU
	S8007	QSP1A11-C18Z	PUSH SWITCH		VOL-
⚠	S8901	QSP2J21-C03	PUSH SWITCH		POWER SW

IF P.W. BOARD ASS'Y (SCM0F001A-H2)

⚠	Symbol No.	Part No.	Part Name	Description	Local
	RESISTOR				
	R0101	NRSA02J-682X	MG R	6.8kΩ 1/10W	J
	R0102	NRSA02J-181X	MG R	180Ω 1/10W	J
	R0103	NRSA02J-222X	MG R	2.2kΩ 1/10W	J
	R0104	NRSA02J-122X	MG R	1.2kΩ 1/10W	J
	R0105	NRSA02J-680X	MG R	68Ω 1/10W	J
	R0107	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	R0108	NRSA02J-272X	MG R	2.7kΩ 1/10W	J
	R0109	NRSA02J-101X	MG R	100Ω 1/10W	J
	R0110	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R0111-12	NRSA02J-561X	MG R	560Ω 1/10W	J
	R0113	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	R0114	NRSA02J-104X	MG R	100kΩ 1/10W	J
	R0115	NRSA02J-272X	MG R	2.7kΩ 1/10W	J
	R0116	NRSA02J-273X	MG R	27kΩ 1/10W	J
	R0117	NRSA02J-224X	MG R	220kΩ 1/10W	J
	R0118	NRSA02J-822X	MG R	8.2kΩ 1/10W	J
	R0121	NRSA02J-151X	MG R	150Ω 1/10W	J
	R0123	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0124	NRSA02J-103X	MG R	10kΩ 1/10W	J
	R0125	NRSA02J-181X	MG R	180Ω 1/10W	J
	R0126	NRSA02J-681X	MG R	680Ω 1/10W	J
	R0127	NRSA02J-181X	MG R	180Ω 1/10W	J
	R0128	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0129	NRSA02J-221X	MG R	220Ω 1/10W	J
	R0130-31	NRSA02J-331X	MG R	330Ω 1/10W	J
	R0135	QRE141J-224Y	C R	220kΩ 1/4W	J
	R0619	NRSA02J-102X	MG R	1kΩ 1/10W	J
	CAPACITOR				
	C0101-07	NCB21HK-472X	C CAP.	4700pF 50V	K
	C0108	NCB21HK-103X	C CAP.	0.01μF 50V	K
	C0110-11	NCB21HK-103X	C CAP.	0.01μF 50V	K
	C0112	NCB21EK-104X	C CAP.	0.1μF 25V	K
	C0114	QETC1HM-474Z	E CAP.	0.47μF 50V	M
	C0116	QETC1HM-474Z	E CAP.	0.47μF 50V	M
	C0118	NCB21HK-103X	C CAP.	0.01μF 50V	K
	C0119-20	QETC1CM-476Z	E CAP.	47μF 16V	M
	C0121	NCB21HK-103X	C CAP.	0.01μF 50V	K
	C0122	QETC1CM-476Z	E CAP.	47μF 16V	M
	C0123	NCB21HK-103X	C CAP.	0.01μF 50V	K
	C0125-29	NCB21HK-103X	C CAP.	0.01μF 50V	K
	TRANSFORMER				
	T0101	CELT001-303J3	C.WAVE TRANSF.		
	COIL				
	L0101	QQLZ014-2R2	PEAKING COIL		
	L0104	QQL244K-120Z	COIL	12μH	K
	L0105-06	QQL244K-8R2Z	COIL	8.2μH	K
	DIODE				
	D0101-02	1SS85-T2	SI.DIODE		
	D0104	MA111-X	SI.DIODE		
	TRANSISTOR				
	Q0101	2SC5083/L-P/-T	SI.TRANSISTOR		
	Q0102	DTC124EKA-X	DIGI.TRANSISTOR		
	Q0103	2SC2412K/QR/-X	SI.TRANSISTOR		
	Q0104	2SA1037K/QR/-X	SI.TRANSISTOR		
	Q0105-06	DTC124EKA-X	DIGI.TRANSISTOR		
	Q0107	2SC2412K/QR/-X	SI.TRANSISTOR		
	Q0108-09	2SA1037K/QR/-X	SI.TRANSISTOR		
	Q0110	DTC124EKA-X	DIGI.TRANSISTOR		
	Q0606-07	2SA1037K/QR/-X	SI.TRANSISTOR		
	IC				
	IC0101	M52342SP	I.C.(MONO-ANA)		

⚠	Symbol No.	Part No.	Part Name	Description	Local
	OTHERS				
	CF0101	MKT39.5MA100P	CERAMIC FILTER		
	CF0102	MKT30.9MA100P	CERAMIC FILTER		
	CF0103	QAX0339-001	CERAMIC FILTER		
	CF0104	TPS5.5MW	CERAMIC FILTER		
	CF0105	TPS6.5MB	CERAMIC FILTER		
	CF0106	TPSH6.0MB	CERAMIC FILTER		
	SF0101	QAX0323-001	SAW FILTER		
	W0017-25	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	W0029-31	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	W0039-41	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	W0043-45	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	W0047-48	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	W0050	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	W0052	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	W0055	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J

AV SW P.W. BOARD ASS'Y (SCM0Y002A-H2)

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	R0101	NRSA02J-472X	MG R	4.7kΩ 1/10W	J
	R0102	NRSA02J-122X	MG R	1.2kΩ 1/10W	J
	R0104	NRSA02J-331X	MG R	330Ω 1/10W	J
	R0105	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	R0106	NRSA02J-472X	MG R	4.7kΩ 1/10W	J
	R0107	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	R0108	NRSA02J-101X	MG R	100Ω 1/10W	J
	R0109-10	NRSA02J-223X	MG R	22kΩ 1/10W	J
	R0111-12	NRSA02J-222X	MG R	2.2kΩ 1/10W	J
	R0113-14	NRSA02J-223X	MG R	22kΩ 1/10W	J
	R0115	NRSA02J-222X	MG R	2.2kΩ 1/10W	J
	R0117	NRSA02J-153X	MG R	15kΩ 1/10W	J
	R0119	NRSA02J-223X	MG R	22kΩ 1/10W	J
	R0120	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	R0121-22	NRSA02J-223X	MG R	22kΩ 1/10W	J
	R0123	NRSA02J-101X	MG R	100Ω 1/10W	J
	R0124	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0125	NRSA02J-681X	MG R	680Ω 1/10W	J
	R0126	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0127	NRSA02J-151X	MG R	150Ω 1/10W	J
	R0129	NRSA02J-334X	MG R	330kΩ 1/10W	J
	R0130	NRSA02J-824X	MG R	820kΩ 1/10W	J
	R0131	NRSA02J-223X	MG R	22kΩ 1/10W	J
	R0132	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0133	NRSA02J-822X	MG R	8.2kΩ 1/10W	J
	R0134-35	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0136	NRSA02J-152X	MG R	1.5kΩ 1/10W	J
	R0151	NRSA02J-222X	MG R	2.2kΩ 1/10W	J
	R0152-54	NRSA02J-271X	MG R	270Ω 1/10W	J
	R0301	NRSA02J-821X	MG R	820Ω 1/10W	J
	R0302	NRSA02J-152X	MG R	1.5kΩ 1/10W	J
	R0303	NRSA02J-101X	MG R	100Ω 1/10W	J
	R0305	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0308	NRSA02J-681X	MG R	680Ω 1/10W	J
	R0309	NRSA02J-562X	MG R	5.6kΩ 1/10W	J
	R0310	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0312	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0313	NRSA02J-101X	MG R	100Ω 1/10W	J
	R0401	NRSA02J-221X	MG R	220Ω 1/10W	J
	R0402	NRSA02J-820X	MG R	82Ω 1/10W	J
	R0403	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0404	NRSA02J-224X	MG R	220kΩ 1/10W	J
	R0405	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0406	NRSA02J-224X	MG R	220kΩ 1/10W	J
	R0407	NRSA02J-221X	MG R	220Ω 1/10W	J
	R0408	NRSA02J-563X	MG R	56kΩ 1/10W	J
	R0409-10	NRSA02J-820X	MG R	82Ω 1/10W	J
	R0411	NRSA02J-221X	MG R	220Ω 1/10W	J
	R0412	NRSA02J-563X	MG R	56kΩ 1/10W	J
	R0413	NRSA02J-222X	MG R	2.2kΩ 1/10W	J
	R0414	NRSA02J-221X	MG R	220Ω 1/10W	J
	R0415	NRSA02J-820X	MG R	82Ω 1/10W	J
	R0416	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0417	NRSA02J-224X	MG R	220kΩ 1/10W	J
	R0418	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0419	NRSA02J-224X	MG R	220kΩ 1/10W	J
	R0420	NRSA02J-471X	MG R	470Ω 1/10W	J
	R0421	NRSA02J-680X	MG R	68Ω 1/10W	J
	R0422	NRSA02J-222X	MG R	2.2kΩ 1/10W	J
	R0423-24	NRSA02J-391X	MG R	390Ω 1/10W	J
	R0425	NRSA02J-473X	MG R	47kΩ 1/10W	J
	R0426-27	NRSA02J-391X	MG R	390Ω 1/10W	J
	R0428	NRSA02J-473X	MG R	47kΩ 1/10W	J
	R0429-30	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	R0431	NRSA02J-563X	MG R	56kΩ 1/10W	J
	R0432	NRSA02J-104X	MG R	100kΩ 1/10W	J
	R0433	NRSA02J-101X	MG R	100Ω 1/10W	J
	R0434	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0435	NRSA02J-221X	MG R	220Ω 1/10W	J
	R0436	NRSA02J-101X	MG R	100Ω 1/10W	J
	R0437	NRSA02J-471X	MG R	470Ω 1/10W	J
	R0438	NRSA02J-561X	MG R	560Ω 1/10W	J
	R0439-40	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0445	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0446	NRSA02J-471X	MG R	470Ω 1/10W	J
	R0447-48	NRSA02J-101X	MG R	100Ω 1/10W	J
	R0451	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0459-60	NRSA02J-101X	MG R	100Ω 1/10W	J
	R0463	NRSA02J-472X	MG R	4.7kΩ 1/10W	J
	R0501	QRG01GJ-181	OM R	180Ω 1W	J
	R0502	NDC21HJ-101X	C CAP.	100pF 50V	J
	R0512-13	NRSA02J-101X	MG R	100Ω 1/10W	J
	R0601	NRSA02J-105X	MG R	1MΩ 1/10W	J
	R0602	NRSA02J-154X	MG R	150kΩ 1/10W	J
	R0603	NRSA02J-822X	MG R	8.2kΩ 1/10W	J
	R0604	NRSA02J-182X	MG R	1.8kΩ 1/10W	J
	R0611	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0612	NRSA02J-562X	MG R	5.6kΩ 1/10W	J
	R0613	NRSA02J-102X	MG R	1kΩ 1/10W	J
	R0614-16	NRSA02J-562X	MG R	5.6kΩ 1/10W	J
	R0617-18	NRSA02J-101X	MG R	100Ω 1/10W	J
	R0620	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	R0622	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	R0629	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	R0631	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	R0635	QRE141J-272Y	C R	2.7kΩ 1/4W	J

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	C0101	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0103-04	NCB21HK-472X	C CAP.	4700pF 50V	K
	C0105-09	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0110	NCB21HK-331X	C CAP.	330pF 50V	K
	C0111	QETC1HM-474Z	E CAP.	0.47µF 50V	M
	C0112	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0113	QETC1CM-336Z	E CAP.	33µF 16V	M
	C0114-15	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0116-17	QCB31HK-103Z	C CAP.	0.01µF 50V	K
	C0118	NDC21HJ-820X	C CAP.	82pF 50V	J
	C0119	NDC21HJ-470X	C CAP.	47pF 50V	J
	C0120	NDC21HJ-180X	C CAP.	18pF 50V	J
	C0121	QETC1HM-474Z	E CAP.	0.47µF 50V	M
	C0122	NDC21HJ-330X	C CAP.	33pF 50V	J
	C0123	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0124	NCB21HK-682X	C CAP.	6800pF 50V	K
	C0126	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0151	NDC21HJ-680X	C CAP.	68pF 50V	J
	C0152	NDC21HJ-470X	C CAP.	47pF 50V	J
	C0153	NDC21HJ-101X	C CAP.	100pF 50V	J
	C0154	NDC21HJ-270X	C CAP.	27pF 50V	J
	C0301	NDC21HJ-180X	C CAP.	18pF 50V	J
	C0302	QEN61CM-106Z	BP E CAP.	10µF 16V	M
	C0303	QETC1CM-107Z	E CAP.	100µF 16V	M
	C0305	NDC21HJ-680X	C CAP.	68pF 50V	J
	C0308	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0311-12	QEN61CM-106Z	BP E CAP.	10µF 16V	M
	C0313	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0314	QETC1HM-106Z	E CAP.	10µF 50V	M
	C0315	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0401	QEN61CM-106Z	BP E CAP.	10µF 16V	M
	C0402-03	QEN61HM-105Z	BP E CAP.	1µF 50V	M
	C0404	QEN61CM-106Z	BP E CAP.	10µF 16V	M
	C0405	NCB21EK-104X	C CAP.	0.1µF 25V	K
	C0406	QEN61CM-106Z	BP E CAP.	10µF 16V	M
	C0407-08	QEN61HM-105Z	BP E CAP.	1µF 50V	M
	C0409	QETC1CM-227Z	E CAP.	220µF 16V	M
	C0410-11	QEN61HM-105Z	BP E CAP.	1µF 50V	M
	C0412-13	NDC21HJ-101X	C CAP.	100pF 50V	J
	C0422	QETC1CM-226Z	E CAP.	22µF 16V	M
	C0423-24	QEN61CM-106Z	BP E CAP.	10µF 16V	M
	C0425-27	NCB21HK-103X	C CAP.	0.01µF 50V	K

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	C0428	QEN61CM-106Z	BP E CAP.	10µF 16V	M
	C0430	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0431	QETC1CM-107Z	E CAP.	100µF 16V	M
	C0448	QETC1HM-106Z	E CAP.	10µF 50V	M
	C0501-02	NDC21HJ-2R0X	C CAP.	2.0pF 50V	J
	C0503-04	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0505-06	QETC1HM-106Z	E CAP.	10µF 50V	M
	C0507-08	NCF21HZ-104X	C CAP.	0.1µF 50V	Z
	C0509	QETC1HM-106Z	E CAP.	10µF 50V	M
	C0510	NCF21HZ-104X	C CAP.	0.1µF 50V	Z
	C0511-12	NCS21HJ-471X	C CAP.	470pF 50V	J
	C0513	NCF21HZ-104X	C CAP.	0.1µF 50V	Z
	C0514-15	QETC1HM-106Z	E CAP.	10µF 50V	M
	C0516	NCF21HZ-104X	C CAP.	0.1µF 50V	Z
	C0517-18	QETC1HM-106Z	E CAP.	10µF 50V	M
	C0521	NCF21HZ-104X	C CAP.	0.1µF 50V	Z
	C0522-23	NCB21HK-102X	C CAP.	1000pF 50V	K
	C0524-25	NCS21HJ-391X	C CAP.	390pF 50V	J
	C0526-27	NDC21HJ-221X	C CAP.	220pF 50V	J
	C0528-35	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0536	NCB21HK-102X	C CAP.	1000pF 50V	K
	C0537	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0539-40	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0541	QETC1CM-107Z	E CAP.	100µF 16V	M
	C0542-51	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0601	QEN61CM-226Z	BP E CAP.	22µF 16V	M
	C0602	QETC1AM-107Z	E CAP.	100µF 10V	M
	C0603	NCB21EK-563X	C CAP.	0.056µF 25V	K
	C0604	NCB21HK-393X	C CAP.	0.039µF 50V	K
	C0605-06	QETC1HM-106Z	E CAP.	10µF 50V	M
	C0607	QEN61CM-226Z	BP E CAP.	22µF 16V	M
	C0608	NCB21HK-103X	C CAP.	0.01µF 50V	K
	C0609	QETC1HM-105Z	E CAP.	1µF 50V	M
	C0610	QEN61CM-226Z	BP E CAP.	22µF 16V	M
	C0611-12	QETC1HM-106Z	E CAP.	10µF 50V	M
	C0613	QETC1CM-226Z	E CAP.	22µF 16V	M
	C0614	QETC1AM-477Z	E CAP.	470µF 10V	M
	C0615	NCB21HK-272X	C CAP.	2700pF 50V	K
	C0616	QETC1HM-106Z	E CAP.	10µF 50V	M
	C0617	NCB21HK-272X	C CAP.	2700pF 50V	K
	C0618	QETC1HM-225Z	E CAP.	2.2µF 50V	M
	C0619-20	NCB21EK-104X	C CAP.	0.1µF 25V	K
	C0621	QEN61HM-225Z	BP E CAP.	2.2µF 50V	M
	C0622-23	NCB21EK-104X	C CAP.	0.1µF 25V	K
	C0624	QETC1HM-106Z	E CAP.	10µF 50V	M
	C0625-26	NCB21EK-104X	C CAP.	0.1µF 25V	K
	C0628	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	C0629	NCB21HK-273X	C CAP.	0.027µF 50V	K
	C0631	QETC1CM-107Z	E CAP.	100µF 16V	M
	C0632	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J

TRANSFORMER

⚠	Symbol No.	Part No.	Part Name	Description	Local
	T0101	CELT001-306	C.WAVE TRANSF.		

COIL

⚠	Symbol No.	Part No.	Part Name	Description	Local
	L0101	QQL244K-1R5Z	COIL	1.5µH	K
	L0102	QQL244K-100Z	COIL	10µH	K
	L0103	QQL05BK-1R5	COIL	1.5µH	K
	L0104	QQL244K-100Z	COIL	10µH	K
	L0105	QQL244K-150Z	COIL	15µH	K
	L0106	QQL244K-180Z	COIL	18µH	K
	L0107	QQL244K-100Z	COIL	10µH	K
	L0151	QQL244K-120Z	COIL	12µH	K
	L0303	QQL244K-120Z	COIL	12µH	K
	L0501	NQL02BJ-4R7X	COIL	4.7µH	
	L0502-04	QQL244K-4R7Z	COIL	4.7µH	K

DIODE

⚠	Symbol No.	Part No.	Part Name	Description	Local
	D0101-02	1SS85-T2	SI.DIODE		
	D0103	MA3091/M/-X	ZENER DIODE		
	D0402	1SS353-X	SI.DIODE		
	D0408	MA3100/M/-X	ZENER DIODE		
	D0410	MA3100/M/-X	ZENER DIODE		
	D0414-19	MA3100/M/-X	ZENER DIODE		
	D0501	MA3082/M/-X	ZENER DIODE		
	D0601	1SS353-X	SI.DIODE		

TRANSISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	Q0101	2SC5083/L-P/-T	SI.TRANSISTOR		
	Q0102-03	2SA1037K/QR/-X	SI.TRANSISTOR		
	Q0104	DTC323TK-X	DIGI.TRANSISTOR		
	Q0105-07	2SC2412K/QR/-X	SI.TRANSISTOR		
	Q0301-03	2SC2412K/QR/-X	SI.TRANSISTOR		
	Q0304	2SA1037K/QR/-X	SI.TRANSISTOR		
	Q0401	2SA673/C/-T	SI.TRANSISTOR		
	Q0402	2SA1037K/QR/-X	SI.TRANSISTOR		
	Q0405	DTA144TKA-X	DIGI.TRANSISTOR		
	Q0406-07	DTC363TK-X	DIGI.TRANSISTOR		

IC

⚠	Symbol No.	Part No.	Part Name	Description	Local
	IC0101	LA7577N	I.C.(MONO-ANA)		
	IC0301	LA7222	I.C.(MONO-ANA)		
	IC0401	CXA1545AS	I.C.(MONO-ANA)		
	IC0501	MSP3410B-PP-F7	I.C.(DIGI-OTHER)		
	IC0601	AN7395K	I.C.(MONO-ANA)		
	IC0602	TDA7315	I.C.(DIGI-OTHER)		

OTHERS

⚠	Symbol No.	Part No.	Part Name	Description	Local
	CF0151	SFSH4.5MCB	CERAMIC FILTER		
	DL0301	CE42599-001	COMB FILTER		
	EF0501-02	CE42482-103Y	EMI FILTER		
⚠	FR0103	QRZ9017-330	FUSI.RESISTOR	33 Ω 1/4W	J
⚠	FR0118	QRZ9017-470	FUSI.RESISTOR	47 Ω 1/4W	J
	J0401	QMD2B04-001	MINI CONNECTOR		
	J0402	CEMN078-001	PIN JACK		
	K0502	CE41433-001Z	BEADS CORE		
	SF0101	CE41031-602	SAW FILTER		
	SF0102	CE41031-601	SAW FILTER		
	W0099	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	X0501	CE42546-001	CRYSTAL		
	Y0103-04	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	Y0112-13	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J
	Y0505-07	NRSA02J-0R0X	MG R	0.0Ω 1/10W	J

AV-K21MH2

PRINTED WIRING BOARD PARTS LIST

MAIN P.W. BOARD ASS'Y (SCM-1014A-H2)

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	R1001-04	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1101	QRE141J-473Y	C R	47kΩ 1/4W	J
	R1102	QRE141J-153Y	C R	15kΩ 1/4W	J
	R1103	QRE141J-750Y	C R	75Ω 1/4W	J
	R1151-52	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1153	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1201	QRE141J-562Y	C R	5.6kΩ 1/4W	J
	R1203	QRE141J-224Y	C R	220kΩ 1/4W	J
	R1204-05	QRE141J-391Y	C R	390Ω 1/4W	J
	R1206	QRE141J-332Y	C R	3.3kΩ 1/4W	J
	R1207	QRE141J-101Y	C R	100Ω 1/4W	J
	R1301	QRE141J-681Y	C R	680Ω 1/4W	J
	R1302	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1303	QRE141J-273Y	C R	27kΩ 1/4W	J
	R1304-06	QRE141J-101Y	C R	100Ω 1/4W	J
	R1307-10	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1311	QRE141J-333Y	C R	33kΩ 1/4W	J
	R1313	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1321-22	QRE141J-101Y	C R	100Ω 1/4W	J
	R1401	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1403	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1421	QRE141J-822Y	C R	8.2kΩ 1/4W	J
	R1422	QRE141J-472Y	C R	4.7kΩ 1/4W	J
	R1423	QRE141J-221Y	C R	220Ω 1/4W	J
	R1425-26	QRE141J-333Y	C R	33kΩ 1/4W	J
	R1427	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1428	QRE141J-822Y	C R	8.2kΩ 1/4W	J
	R1429	QRE141J-562Y	C R	5.6kΩ 1/4W	J
	R1430	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1431	QRE141J-682Y	C R	6.8kΩ 1/4W	J
	R1432	QRE121J-4R7Y	C R	4.7Ω 1/2W	J
	R1433	QRE121J-6R8Y	C R	6.8Ω 1/2W	J
	R1440	QRG01GJ-221	OM R	220Ω 1W	J
	R1444	QRE121J-221Y	C R	220Ω 1/2W	J
	R1445	QRE121J-821Y	C R	820Ω 1/2W	J
	R1446	QRK126J-1R0X	C R	1.0Ω 1/2W	J
	R1451	QRE141J-272Y	C R	2.7kΩ 1/4W	J
	R1452	QRE141J-563Y	C R	56kΩ 1/4W	J
	R1453	QRE141J-183Y	C R	18kΩ 1/4W	J
	R1454	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1501	QRE141J-822Y	C R	8.2kΩ 1/4W	J
	R1502	QRE141J-621Y	C R	620Ω 1/4W	J
	R1504	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1505	QRE141J-104Y	C R	100kΩ 1/4W	J
	R1522	QRE141J-123Y	C R	12kΩ 1/4W	J
	R1523	QRE121J-222Y	C R	2.2kΩ 1/2W	J
	R1524-25	QRG029J-332	OM R	3.3kΩ 2W	J
	R1526	QRE121J-220Y	C R	22Ω 1/2W	J
	R1527	QRG029J-123	OM R	12kΩ 2W	J
	R1528	QRE121J-471Y	C R	470Ω 1/2W	J
	R1582	QRE141J-822Y	C R	8.2kΩ 1/4W	J
	R1583	QRE141J-123Y	C R	12kΩ 1/4W	J
	R1594	QRE141J-332Y	C R	3.3kΩ 1/4W	J
	R1651	QRE141J-182Y	C R	1.8kΩ 1/4W	J
	R1652	QRE141J-122Y	C R	1.2kΩ 1/4W	J
	R1653	QRE141J-182Y	C R	1.8kΩ 1/4W	J
	R1654	QRE141J-122Y	C R	1.2kΩ 1/4W	J
	R1655	QRE141J-104Y	C R	100kΩ 1/4W	J
	R1670	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1672-73	QRE141J-181Y	C R	180Ω 1/4W	J
	R1674-75	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1690-91	QRE121J-4R7Y	C R	4.7Ω 1/2W	J
	R1692-93	QRE141J-561Y	C R	560Ω 1/4W	J
	R1701	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1703-04	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1705-08	QRE141J-221Y	C R	220Ω 1/4W	J

RESISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	R1709	QRE141J-682Y	C R	6.8kΩ 1/4W	J
	R1710	QRB089J-682	NETW.R	6.8kΩ	
	R1711	QRE141J-473Y	C R	47kΩ 1/4W	J
	R1712	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1713-14	QRE141J-332Y	C R	3.3kΩ 1/4W	J
	R1715	QRE141J-221Y	C R	220Ω 1/4W	J
	R1720	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1721	QRE141J-392Y	C R	3.9kΩ 1/4W	J
	R1722	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1723	QRE141J-392Y	C R	3.9kΩ 1/4W	J
	R1724	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1725	QRE141J-392Y	C R	3.9kΩ 1/4W	J
	R1727	QRE141J-472Y	C R	4.7kΩ 1/4W	J
	R1729	QRE141J-124Y	C R	120kΩ 1/4W	J
	R1730	QRE141J-683Y	C R	68kΩ 1/4W	J
	R1731	QRE141J-563Y	C R	56kΩ 1/4W	J
	R1732	QRE141J-223Y	C R	22kΩ 1/4W	J
	R1733-34	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1735	QRE141J-153Y	C R	15kΩ 1/4W	J
	R1736	QRE141J-153Y	C R	15kΩ 1/4W	J
	R1737	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1738	QRE141J-821Y	C R	820Ω 1/4W	J
	R1739	QRE141J-471Y	C R	470Ω 1/4W	J
	R1740-44	QRE141J-221Y	C R	220Ω 1/4W	J
	R1745	QRE141J-101Y	C R	100Ω 1/4W	J
	R1747-49	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1752	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1755-56	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1761	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1762	QRE141J-331Y	C R	330Ω 1/4W	J
	R1764	QRE141J-472Y	C R	4.7kΩ 1/4W	J
	R1765-66	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1770	QRE141J-102Y	C R	1kΩ 1/4W	J
	R1771	QRE141J-103Y	C R	10kΩ 1/4W	J
⚠	R1901	QRF104K-3R9	UNF R	3.9 Ω 10W	K
	R1902	QRL039J-683	OM R	68kΩ 3W	J
	R1921	QRE121J-681Y	C R	680Ω 1/2W	J
	R1922	QRM059J-R22	MP R	0.22 Ω 5W	J
	R1923	QRX029J-2R2	MF R	2.2 Ω 2W	J
	R1924	QRE141J-103Y	C R	10kΩ 1/4W	J
	R1925	QRE121J-102Y	C R	1kΩ 1/2W	J
	R1926	QRE121J-152Y	C R	1.5kΩ 1/2W	J
	R1928	QRL039J-473	OM R	47kΩ 3W	J
	R1929	QRE121J-332Y	C R	3.3kΩ 1/2W	J
	R1930	QRL039J-473	OM R	47kΩ 3W	J
	R1932	QRE121J-824Y	C R	820kΩ 1/2W	J
	R1934	QRN141J-333Y	C R	33kΩ 1/4W	J
	R1935	QRE141J-152Y	C R	1.5kΩ 1/4W	J
	R1936	QRK129J-3R9	C R	3.9Ω 1/2W	J
	R1941	QRE121J-152Y	C R	1.5kΩ 1/2W	J
	R1943	QRE141J-472Y	C R	4.7kΩ 1/4W	J
	R1944	QRE121J-332Y	C R	3.3kΩ 1/2W	J
	R1946	QRE141J-153Y	C R	15kΩ 1/4W	J
	R1971	QRE141J-223Y	C R	22kΩ 1/4W	J
	R1972	QRE121J-152Y	C R	1.5kΩ 1/2W	J
	R1973	QRE141J-223Y	C R	22kΩ 1/4W	J
	R1974	QRE141J-332Y	C R	3.3kΩ 1/4W	J
	R1975	QRE141J-123Y	C R	12kΩ 1/4W	J
	R1977	QRG029J-183	OM R	18kΩ 2W	J
	R1978	QRE121J-152Y	C R	1.5kΩ 1/2W	J
	R1980	QRE141J-821Y	C R	820Ω 1/4W	J
	R1981	QRE141J-222Y	C R	2.2kΩ 1/4W	J
	R1982	QRE141J-822Y	C R	8.2kΩ 1/4W	J
	R1984	QRL039J-330	OM R	33Ω 3W	J
⚠	R1991	QRZ0057-825	C R	8.2MΩ 1W	J

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	C1001	QETC1HM-475Z	E CAP.	4.7µF 50V M	
	C1002	QETC1CM-108Z	E CAP.	1000µF 16V M	
	C1003	QETC1HM-106Z	E CAP.	10µF 50V M	
	C1004	QETC1CM-107Z	E CAP.	100µF 16V M	
	C1005-07	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1015	QCB31HK-222Z	C CAP.	2200pF 50V K	
	C1151	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1201	QETC1CM-107Z	E CAP.	100µF 16V M	
	C1202	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1203	QETC1HM-105Z	E CAP.	1µF 50V M	
	C1204	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1205	QETC1HM-475Z	E CAP.	4.7µF 50V M	
	C1206	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1207	QETC1CM-107Z	E CAP.	100µF 16V M	
	C1208	QETC1CM-227Z	E CAP.	220µF 16V M	
	C1209	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1210	QETC1HM-106Z	E CAP.	10µF 50V M	
	C1212	QETN1HM-106Z	E CAP.	10µF 50V M	
	C1301	QFLC1HJ-823Z	M CAP.	0.082µF 50V J	
	C1302	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1303	QDC31HJ-120Z	C CAP.	12pF 50V J	
	C1304-06	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1307	QETC1HM-225Z	E CAP.	2.2µF 50V M	
	C1308	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1309	QETC1HM-475Z	E CAP.	4.7µF 50V M	
	C1310	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1311	QETC1CM-477Z	E CAP.	470µF 16V M	
	C1312	QETC1CM-227Z	E CAP.	220µF 16V M	
	C1313-15	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1321-22	QCS31HJ-101Z	C CAP.	100pF 50V J	
	C1402	QEM61HK-225Z	E CAP.	2.2µF 50V K	
	C1403	QETC1HM-105Z	E CAP.	1µF 50V M	
	C1420	QFN31HJ-182Z	M CAP.	1800pF 50V J	
	C1421	QFN31HJ-102Z	M CAP.	1000pF 50V J	
	C1423	QFLC2AJ-393Z	M CAP.	0.039µF 100V J	
	C1427	QETC1VM-107Z	E CAP.	100µF 35V M	
	C1428	QETC1VM-107Z	E CAP.	100µF 35V M	
	C1430	QFN32AJ-102Z	M CAP.	1000pF 100V J	
	C1431	QCB31HK-221Z	C CAP.	220pF 50V K	
	C1432	QCB32HK-221Z	C CAP.	220pF 500V K	
	C1433	QETC1HM-475Z	E CAP.	4.7µF 50V M	
	C1435	QETB1EM-108	E CAP.	1000µF 25V M	
	C1436	QFV71HJ-334Z	MF CAP.	0.33µF 50V J	
	C1451	QETC1HM-106Z	E CAP.	10µF 50V M	
	C1501	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1502	QETC1HM-105Z	E CAP.	1µF 50V M	
	C1503	QETB1CM-228	E CAP.	2200µF 16V M	
	C1504-06	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1507	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1508	QETC1AM-107Z	E CAP.	100µF 10V M	
	C1509	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1521	QCB32HK-151Z	C CAP.	150pF 500V K	
	C1522	QCB32HK-102Z	C CAP.	1000pF 500V K	
	C1523	QEHC2CM-105Z	E CAP.	1µF 160V M	
⚠	C1524	QFZ0152-8601	MPP CAP.	8600pF1.5kVH±2.5%	
⚠	C1527	QFZ0151-474	MPP CAP.	0.47µF 200V ±3%	
	C1529	QETC2EM-475Z	E CAP.	4.7µF 250V M	
	C1530	QCB32HK-561Z	C CAP.	560pF 500V K	
	C1551	QCB32HK-152Z	C CAP.	1500pF 500V K	
	C1552	QETM1VM-108	E CAP.	1000µF 35V M	
	C1557	QETC2EM-475Z	E CAP.	4.7µF 250V M	
	C1581	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1651-52	QENC1EM-106Z	BP E CAP.	10µF 25V M	
	C1653	QETC1EM-227Z	E CAP.	220µF 25V M	
	C1670-71	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1673-74	QCS31HJ-221Z	C CAP.	220pF 50V J	
	C1677-78	QETC1EM-107Z	E CAP.	100µF 25V M	
	C1681	QETM1EM-228	E CAP.	2200µF 25V M	
	C1682-83	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1684-85	QETB1EM-108	E CAP.	1000µF 25V M	
	C1686-87	QETC1CM-476Z	E CAP.	47µF 16V M	
	C1701	QETC1CM-227Z	E CAP.	220µF 16V M	
	C1702	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1703	QETN1CM-107Z	E CAP.	100µF 16V M	
	C1704	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	

CAPACITOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	C1705	QETC1AM-107Z	E CAP.	100µF 10V M	
	C1707	QETC1HM-106Z	E CAP.	10µF 50V M	
	C1710	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1711	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1712	QETC1AM-107Z	E CAP.	100µF 10V M	
	C1713	QCS31HJ-271Z	C CAP.	270pF 50V J	
	C1714	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1715	QFLC1HJ-473Z	M CAP.	0.047µF 50V J	
	C1718	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1719	QCB31HK-102Z	C CAP.	1000pF 50V K	
	C1724	QDC31HJ-680Z	C CAP.	68pF 50V J	
	C1725	QDC31HJ-560Z	C CAP.	56pF 50V J	
	C1726	QCS31HJ-101Z	C CAP.	100pF 50V J	
	C1727	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1728-29	QCB31HK-103Z	C CAP.	0.01µF 50V K	
	C1730	QCS31HJ-181Z	C CAP.	180pF 50V J	
	C1731	QFLC1HJ-103Z	M CAP.	0.01µF 50V J	
	C1732	QETN1HM-106Z	E CAP.	10µF 50V M	
	C1771	QCB31HK-102Z	C CAP.	1000pF 50V K	
⚠	C1902	QFZ9040-104	MF CAP.	0.1µFAC275V M	
⚠	C1903	QFZ9040-473	MF CAP.	0.047µFAC275V M	
⚠	C1904	QCZ9085-102	C CAP.	1000pFAC400V P	
⚠	C1905	QCZ9085-102	C CAP.	1000pFAC400V P	
⚠	C1906	QCZ9085-102	C CAP.	1000pFAC400V P	
⚠	C1907	QCZ9085-102	C CAP.	1000pFAC400V P	
⚠	C1909	QEZ0199-227	E CAP.	220µF 400V M	
	C1921	QCZ0122-391	C CAP.	390pF 2000V K	
	C1922	QCS31HJ-471Z	C CAP.	470pF 50V J	
	C1924	QETC1VM-107Z	E CAP.	100µF 35V M	
	C1925	QFN31HJ-102Z	M CAP.	1000pF 50V J	
	C1926	QFN31HJ-182Z	M CAP.	1800pF 50V J	
	C1929	QCZ0334-103	C CAP.		
	C1930	QCZ0122-221	C CAP.	220pF 2000V K	
	C1932	QCZ0122-391	C CAP.	390pF 2000V K	
	C1941	QCZ0325-561	C CAP.	560pF 2000V K	
⚠	C1942	QEZ0203-107	E CAP.	100µF 160V M	
	C1943	QEZ0203-107	E CAP.	100µF 160V M	
	C1945	QETB1EM-108	E CAP.	1000µF 25V M	
	C1946	QCB32HK-561Z	C CAP.	560pF 500V K	
	C1948	QETM1VM-108	E CAP.	1000µF 35V M	
	C1949	QCB31HK-471Z	C CAP.	470pF 50V K	
	C1950	QFLC1HJ-104Z	M CAP.	0.1µF 50V J	
	C1952	QETN1CM-108Z	E CAP.	1000µF 16V M	
	C1971	QETC1HM-106Z	E CAP.	10µF 50V M	
	C1972	QETC1CM-477Z	E CAP.	470µF 16V M	
	C1973	QETN1EM-107Z	E CAP.	100µF 25V M	
	C1974	QETN1EM-476Z	E CAP.	47µF 25V M	
	C1975	QETN1CM-107Z	E CAP.	100µF 16V M	
	C1976	QETC1CM-107Z	E CAP.	100µF 16V M	
	C1977	QETN1CM-108Z	E CAP.	1000µF 16V M	
	C1978	QETC1AM-107Z	E CAP.	100µF 10V M	
⚠	C1991	QCZ9079-471	C CAP.	470pFAC250V K	
⚠	C1992	QCZ9079-471	C CAP.	470pFAC250V K	
⚠	C1993	QCZ9079-222	C CAP.	2200pFAC250V M	

TRANSFORMER

⚠	Symbol No.	Part No.	Part Name	Description	Local
	T1521	CE42034-001	H.DRIVE TRANSF.		
⚠	T1522	QQH0022-001	H.V.TRANSF.		
⚠	T1921	CETS101-001JD	SWITCH.TRANSF.		

COIL

⚠	Symbol No.	Part No.	Part Name	Description	Local
	L1001	QQL05BK-8R2Z	COIL	8.2µH K	
	L1201	QQL05BK-4R7Z	COIL	4.7µH K	
	L1301-02	QQL244K-470Z	COIL	47µH K	
	L1522	CE42104-001	LINEARITY COIL		
	L1551	QQLZ018-220	HEATER CHOKE		
	L1701	QQL244K-8R2Z	COIL	8.2µH K	
	L1702	QQL244K-5R6Z	COIL	5.6µH K	
	L1703	QQL244K-100Z	COIL	10µH K	
	L1941-43	QQL42AK-820Z	COIL	82µH K	

DIODE

⚠	Symbol No.	Part No.	Part Name	Description	Local
	D1001	MTZJ33A-T2	ZENER DIODE		
	D1203	1SS133-T2	SI.DIODE		
	D1421	1SS133-T2	SI.DIODE		
	D1422	MTZJ75-T2	ZENER DIODE		
	D1423	1SR124-400A-T2	SI.DIODE		
	D1427	MTZJ75-T2	ZENER DIODE		
	D1428	MTZJ6.8A-T2	ZENER DIODE		
	D1452	MTZJ22B-T2	ZENER DIODE		
	D1453	1SS133-T2	SI.DIODE		
	D1501	MTZJ9.1C-T2	ZENER DIODE		
	D1523	RGP10J-5025-T3	SI.DIODE		
	D1551	RU3AM-LFC4	SI.DIODE		
	D1553	RH1S-T3	SI.DIODE		
	D1582	RGP10J-5025-T3	SI.DIODE		
	D1701-03	1SS133-T2	SI.DIODE		
	D1706-10	MTZJ8.2B-T2	ZENER DIODE		
	D1713	1SS133-T2	SI.DIODE		
	D1716-17	1SS133-T2	SI.DIODE		
⚠	D1901	D3SBA60	DIODE BRIDGE		
	D1921	1SR124-400A-T2	SI.DIODE		
	D1922	1SS133-T2	SI.DIODE		
	D1923	MTZJ15A-T2	ZENER DIODE		
	D1924	1SS133-T2	SI.DIODE		
	D1926	EG1A-T3	SI.DIODE		
	D1927	MTZJ6.8A-T2	ZENER DIODE		
	D1929	MTZJ15A-T2	ZENER DIODE		
	D1941	RU3AM-LFC4	SI.DIODE		
	D1942-43	RU3YX-LFC4	SI.DIODE		
	D1944	MTZJ6.2B-T2	ZENER DIODE		
	D1945	RGP10J-5025-T3	SI.DIODE		
	D1946	1SR124-400A-T2	SI.DIODE		
	D1981-84	1SS133-T2	SI.DIODE		
	D1986	MTZJ4.7A-T2	ZENER DIODE		

TRANSISTOR

⚠	Symbol No.	Part No.	Part Name	Description	Local
	Q1151	2SC1740S/QR/-T	SI.TRANSISTOR		
	Q1201	2SA933AS/QR/-T	SI.TRANSISTOR		
	Q1422-24	2SC1740S/QR/-T	SI.TRANSISTOR		
	Q1451-52	2SC1815/YG/-T	SI.TRANSISTOR		
	Q1521	BSN274	F.E.T.		
⚠	Q1522	2SD1878-YD	SI.TRANSISTOR	H.OUT	
	Q1651-52	DTC323TS-T	DIGI.TRANSISTOR		
	Q1653	2SA933AS/QR/-T	SI.TRANSISTOR		
	Q1701	2SA933AS/QR/-T	SI.TRANSISTOR		
	Q1702-03	2SC1740S/QR/-T	SI.TRANSISTOR		
	Q1921	2SA933AS/QR/-T	SI.TRANSISTOR		
	Q1941	2SC1740S/QR/-T	SI.TRANSISTOR		
	Q1942	DTC144GSA-T	DIGI.TRANSISTOR		
	Q1971	2SA966/OY/-T	SI.TRANSISTOR		
	Q1972	DTC144GSA-T	DIGI.TRANSISTOR		
	Q1973	2SA966/OY/-T	SI.TRANSISTOR		
	Q1974	DTC144GSA-T	DIGI.TRANSISTOR		
	Q1981	2SA933AS/QR/-T	SI.TRANSISTOR		

IC

⚠	Symbol No.	Part No.	Part Name	Description	Local
	IC1201	TB1227BN	I.C.(DIGI-OTHER)		
	IC1421	LA7840	I.C.(MONO-ANA)		
	IC1681	LA4446	I.C.(MONO-ANA)		
	IC1701	M37204MC-D40SP	I C	SERVICE	
	IC1702	AT24C08-K29MS5	I.C.(MONO-ANA)		
	IC1703	L78LR05E-MA	I.C.(MONO-ANA)		
⚠	IC1921	STR-F6654	I.C.(HYBRID)		
⚠	IC1941	S1854-C2	I.C.(MONO-ANA)		
	IC1971	AN7812F	I.C.(MONO-ANA)		
	IC1972	AN7809F	I.C.(MONO-ANA)		
	IC1973	PQ05RF11	I.C.(HYBRID)		
	IC1974	AN78L05-T	I.C.(MONO-ANA)		

OTHERS

⚠	Symbol No.	Part No.	Part Name	Description	Local
		CEMG002-001Z	FUSE CLIP		
	CL1002	CHJ2040-052-FS	WIRE CLAMP		
	CN1002	CHC108N-25T-A	FFC CONNECTOR		
⚠	CP1942	ICP-N75-Y	I.C.PROTECT		
⚠	CP1943	ICP-N75-Y	I.C.PROTECT		
⚠	CP1944	ICP-N5-Y	I.C.PROTECT		
⚠	CP1945	ICP-N75-Y	I.C.PROTECT		
	EF1201	CE42142-222Z	EMI FILTER		
⚠	F1901	QMF51E2-3R15J4	FUSE	3.15A	
⚠	FR1551	QRZ9017-4R7	FUSI.RESISTOR	4.7 Ω 1/4W J	
⚠	FR1552	QRZ9021-1R0	FUSI.RESISTOR	1.0 Ω 1W J	
⚠	FR1554	QRZ9017-150	FUSI.RESISTOR	15 Ω 1/4W J	
	K1002	CE41433-001Z	BEADS CORE		
	K1201	CE41433-001Z	BEADS CORE		
	K1421	CE41433-001Z	BEADS CORE		
	K1501	CE41433-001Z	BEADS CORE		
	K1921	CE41433-001Z	BEADS CORE		
	K1923	CE41433-001Z	BEADS CORE		
	K1941-44	CE42050-001Z	CORE		
	K1945	CE41433-001Z	BEADS CORE		
⚠	LF1902	QQR0527-002	LINE FILTER		
⚠	PC1921	TLP721F(GR)	I.C.(PH.COUPLER)		
	S1401	QSL4A13-C02	LEVER SWITCH		
⚠	TH1901	QAD0101-9R0	P.THERMISTOR		
	TU1001	CEEM574-B01	TUNER		
⚠	VA1901	ERZV10V621CS	VARISTOR		
	X1301	QAX0354-001	CRYSTAL		
	X1701	CST8.00MTW	CER.RESONATOR		
	Y1201	CE41433-001Z	BEADS CORE		

CRT SOCKET P.W. BOARD ASS'Y
(SCM-3002A-H2)

Refer to PARTS LIST in page 37 for this P.W. board.

FRONT CONTROL P.W. BOARD ASS'Y
(SCM-8002A-H2)

Refer to PARTS LIST in page 37 for this P.W. board.

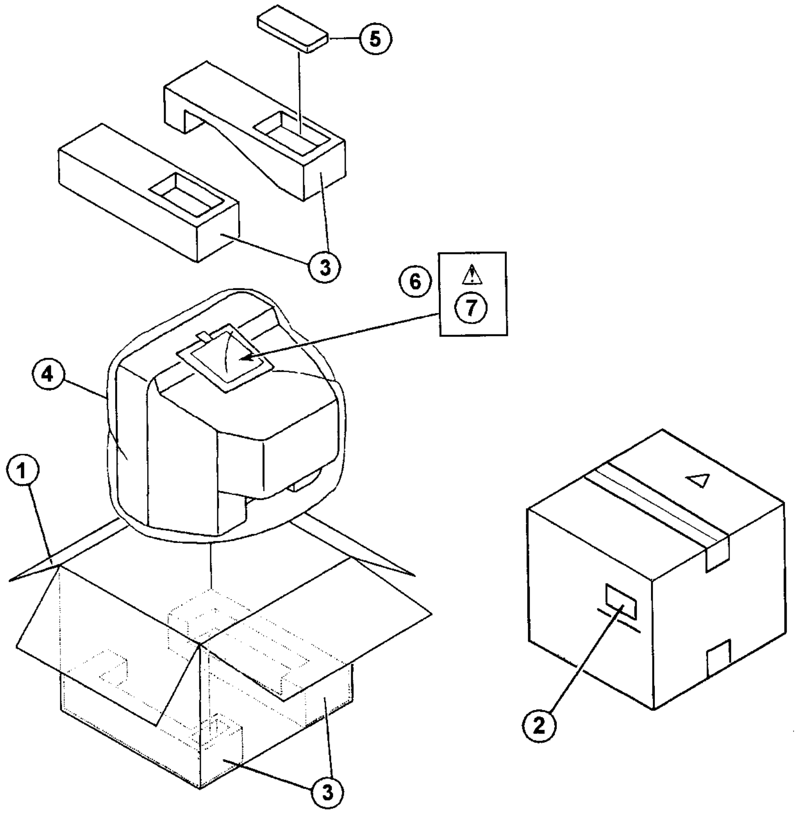
IF P.W. BOARD ASS'Y
(SCM0F001A-H2)

Refer to PARTS LIST in page 38 for this P.W. board.

AV SW P.W. BOARD ASS'Y
(SCM0Y002A-H2)

Refer to PARTS LIST in page 39 for this P.W. board.

PACKING



PACKING PARTS LIST

⚠	Ref. No.	Part No.	Part Name	Description	Local
	AV-K21MS2				
	1	CP11781-002-H	PACKING CASE		
	2	CM47385-00B-H	POS/SERIAL LABEL		
	3	LC10070-002A-H	CUSHION ASSY	4pcs in 1set	
	4	CP30697-005-H	POLY BAG		
	5	RM-C231-1C	REMOCON UNIT		
	6	QPGA025-03505H	POLY BAG		
⚠	7	LCT0189-001A-H	INST BOOK		
	AV-K21MH2				
	1	CP11781-005-H	PACKING CASE		
	2	CM47385-00B-H	POS/SERIAL LABEL		
	3	LC10070-002A-H	CUSHION ASSY	4pcs in 1set	
	4	CP30697-005-H	POLY BAG		
	5	RM-C237-1C	REMOCON UNIT		
	6	QPGA025-03505H	POLY BAG		
⚠	7	LCT0191-001A-H	INST. BOOK		

REMOTE CONTROL UNIT PARTS LIST

⚠ Ref. No.	Part No.	Part Name	Description	Local
RM-C231-1C [AV-K21MS2] **RM-C237-1C [AV-K21MH2]**				
	3139 224 20073	BATTERY COVER		

Memo

AV-K21MS2/AV-K21MH2 STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the⚠ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal :PAL Colour bar signal
(2)Setting positions of each knob/button and variable resistor :Original setting position when shipped
(3)Internal resistance of tester :DC 20kΩ/V
(4)Oscilloscope sweeping time :H ⇒ 20μS/div
:V ⇒ 5mS/div
:Others ⇒ Sweeping time is specified
(5)Voltage values :All DC voltage values

∗ Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

●In the PW board :R1209→R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

●Resistance value
No unit :[Ω]
K :[KΩ]
M :[MΩ]

●Rated allowable power
No indication :1/4[W]
Others :As specified

●Type
No indication :Carbon resistor
OMR :Oxide metal film resistor
MFR :Metal film resistor
MPR :Metal plate resistor
UNFR :Uninflammable resistor
FR :Fusible resistor

*Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

●Capacitance value
1 or higher :[pF]
less than 1 :[μF]

●Withstand voltage
No indication :DC50[V]
Others :DC withstand voltage [V]
AC indicated :AC withstand voltage [V]

*Electrolytic Capacitors
47/50[Example]:Capacitance value [μF]/withstand voltage[V]

●Type
No indication :Ceramic capacitor
MY :Mylar capacitor
MM :Metalized mylar capacitor
PP :Polypropylene capacitor
MPP :Metalized polypropylene capacitor
MF :Metalized film capacitor
TF :Thin film capacitor
BP :Bipolar electrolytic capacitor
TAN :Tantalum capacitor

(3)Coils
No unit :[μH]
Others :As specified

(4)Power Supply
═══ :B1
▬▬▬▬ :B2(12V)
▬▭▬▭ :9V
▭▭▭▭ :5V

*Respective voltage values are indicated

(5)Test point
⦿ :Test point
○ :Only test point display

(6)Connecting method
▭ :Connector
◯ :Wrapping or soldering
→>— —→>— :Receptacle

(7)Ground symbol
⊥ :LIVE side ground
⏚ :ISOLATED(NEUTRAL) side ground
⏚ :EARTH ground
▽ :DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND. Therefore, care must be taken for the following points.

(1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

(2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected , a fuse or any parts will be broken.

◇**Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.**

Jul. 1998 No.51411

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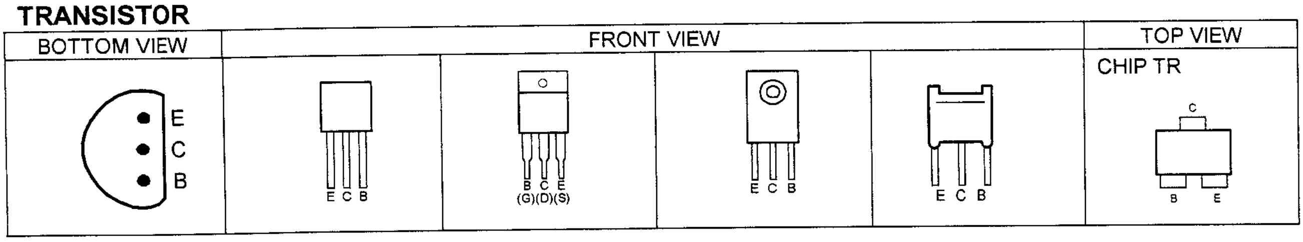
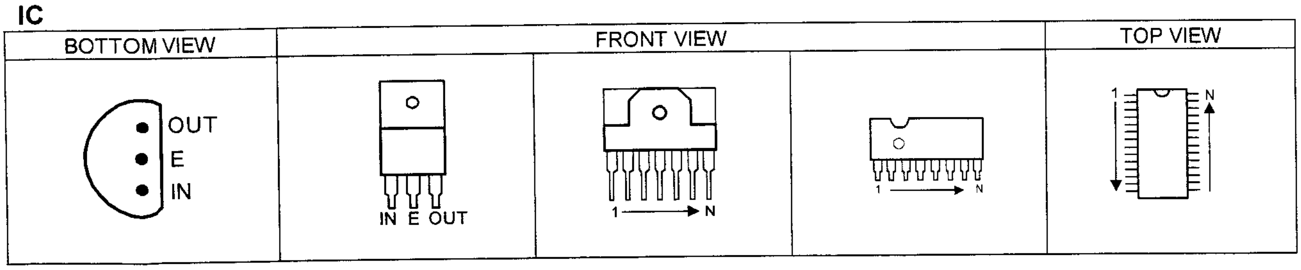
SEMICONDUCTOR SHAPES

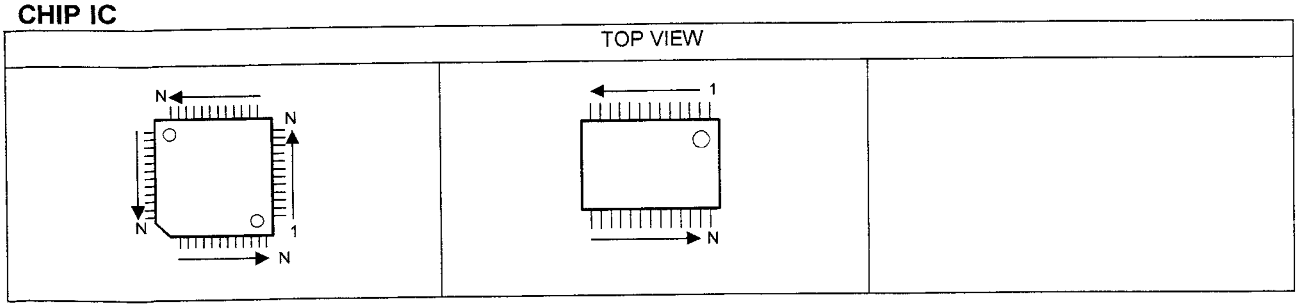
TRANSISTOR


BOTTOM VIEW
FRONT VIEW
TOP VIEW
E
C
B
E C B
B C E
(G)(D)(S)
E C B
E C B
CHIP TR
C
B E

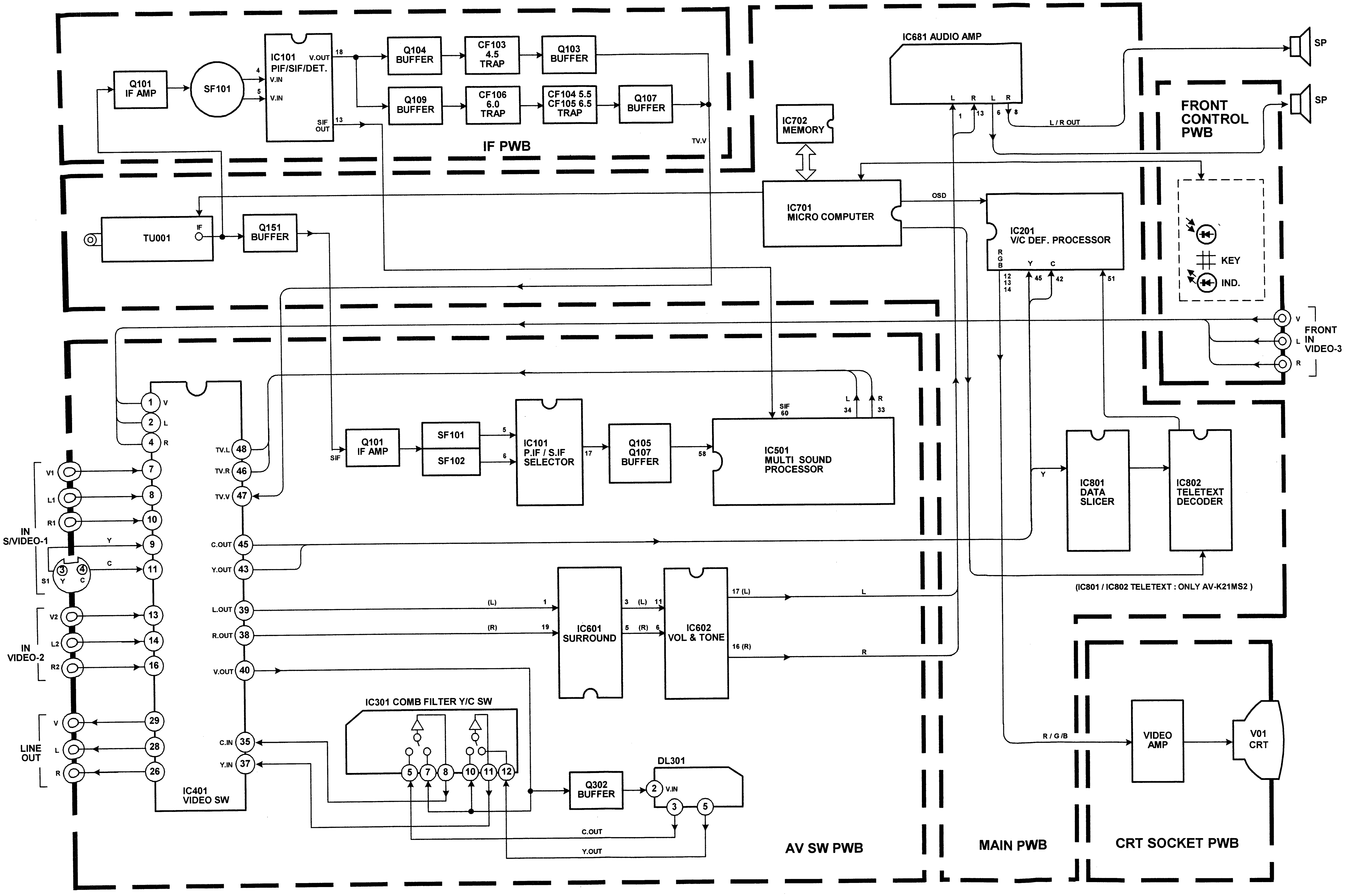
IC


BOTTOM VIEW
FRONT VIEW
TOP VIEW
OUT
E
IN
IN E OUT
1
N
1
N
1
N

CHIP IC

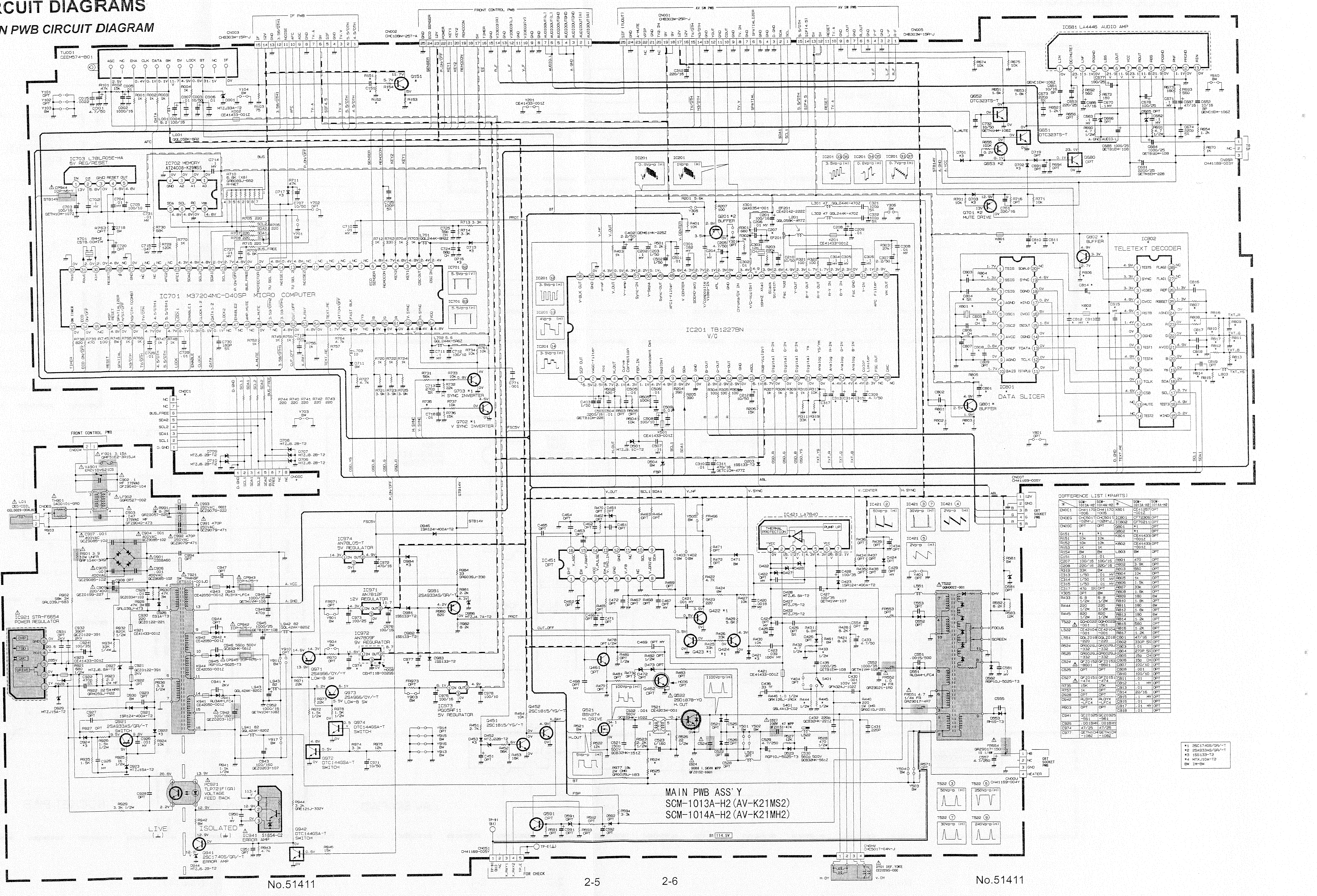

TOP VIEW
N
N
N
1
N
1
N

BLOCK DIAGRAM


IF PWB
Q101 IF AMP
SF101
IC101 PIF/SIF/DET.
V.OUT
V.IN
SIF OUT
Q104 BUFFER
CF103 4.5 TRAP
Q103 BUFFER
Q109 BUFFER
CF106 6.0 TRAP
CF104 5.5 CF105 6.5 TRAP
Q107 BUFFER
TV.V
TU001
IF
Q151 BUFFER
IC681 AUDIO AMP
L/R OUT
SP
SP
IC702 MEMORY
IC701 MICRO COMPUTER
OSD
IC201 V/C DEF. PROCESSOR
R G B
Y
C
FRONT CONTROL PWB
KEY
IND.
V
L
R
FRONT IN VIDEO-3
IC401 VIDEO SW
TV.L
TV.R
TV.V
C.OUT
Y.OUT
L.OUT
R.OUT
V.OUT
C.IN
Y.IN
V1
L1
R1
IN S/VIDEO-1
S1
Y
C
V2
L2
R2
IN VIDEO-2
LINE OUT
Q101 IF AMP
SIF
SF101
SF102
IC101 P.IF / S.IF SELECTOR
Q105 Q107 BUFFER
IC501 MULTI SOUND PROCESSOR
IC601 SURROUND
IC602 VOL & TONE
IC301 COMB FILTER Y/C SW
Q302 BUFFER
DL301
C.OUT
Y.OUT
IC801 DATA SLICER
IC802 TELETEXT DECODER
(IC801 / IC802 TELETEXT : ONLY AV-K21MS2)
R / G / B
VIDEO AMP
V01 CRT
AV SW PWB
MAIN PWB
CRT SOCKET PWB

CIRCUIT DIAGRAMS

MAIN PWB CIRCUIT DIAGRAM


TU001 CEEM574-B01
IF PWB
FRONT CONTROL PWB
AV SW PWB
IC703 L78LR05E-MA 5V REG/RESET
IC702 MEMORY AT24C08-K29M55
IC701 M37204MC-D40SP MICRO COMPUTER
IC201 TB1227BN V/C
IC681 LA4446 AUDIO AMP
IC802 TELETEXT DECODER
IC801 DATA SLICER
Q802 BUFFER
Q801 BUFFER
Q201 BUFFER
Q701 MUTE DRIVE
Q703 H SYNC INVERTER
Q702 V SYNC INVERTER
IC421 LA7840
THERMAL PROTECTION
PUMP UP
IC451 OPT
IC974 AN78L05-T 5V REGULATOR
IC971 AN7812F 12V REGULATOR
IC972 AN7809F 9V REGULATOR
IC973 PQ05RF11 5V REGULATOR
Q981 2SA933AS/QR/-T
Q971 2SA956/OY/-Y LOW-B SW
Q973 2SA956/OY/-T LOW-B SW
Q974 DTC144GSA-T SWITCH
Q972 DTC144GSA-T SWITCH
IC921 STR-F6654 POWER REGULATOR
PC521 TLP721F(GR) VOLTAGE FEED BACK
IC941 SE154-C2 ERROR AMP
Q941 2SC1740S/QR/-T ERROR AMP
Q942 DTC144GSA-T SWITCH
Q921 2SA933AS/QR/-T SWITCH
T921 SW TRANSF
LIVE
ISOLATED
Q521 BSN274 H. DRIVE
Q522 2SD1878-YD H. OUT
Q451 2SC1815/YG/-T
Q452 2SC1815/YG/-T
Q453
T522
FOCUS
SCREEN
CRT SOCKET PWB
HB
NC
GND
HEATER
CN0C1 CH41169-005Y
CN0OU CH41169-004Y
CN0HV
CN0SI
FOR CHECK
MAIN PWB ASS'Y
SCM-1013A-H2(AV-K21MS2)
SCM-1014A-H2(AV-K21MH2)

DIFFERENCE LIST (*PARTS)

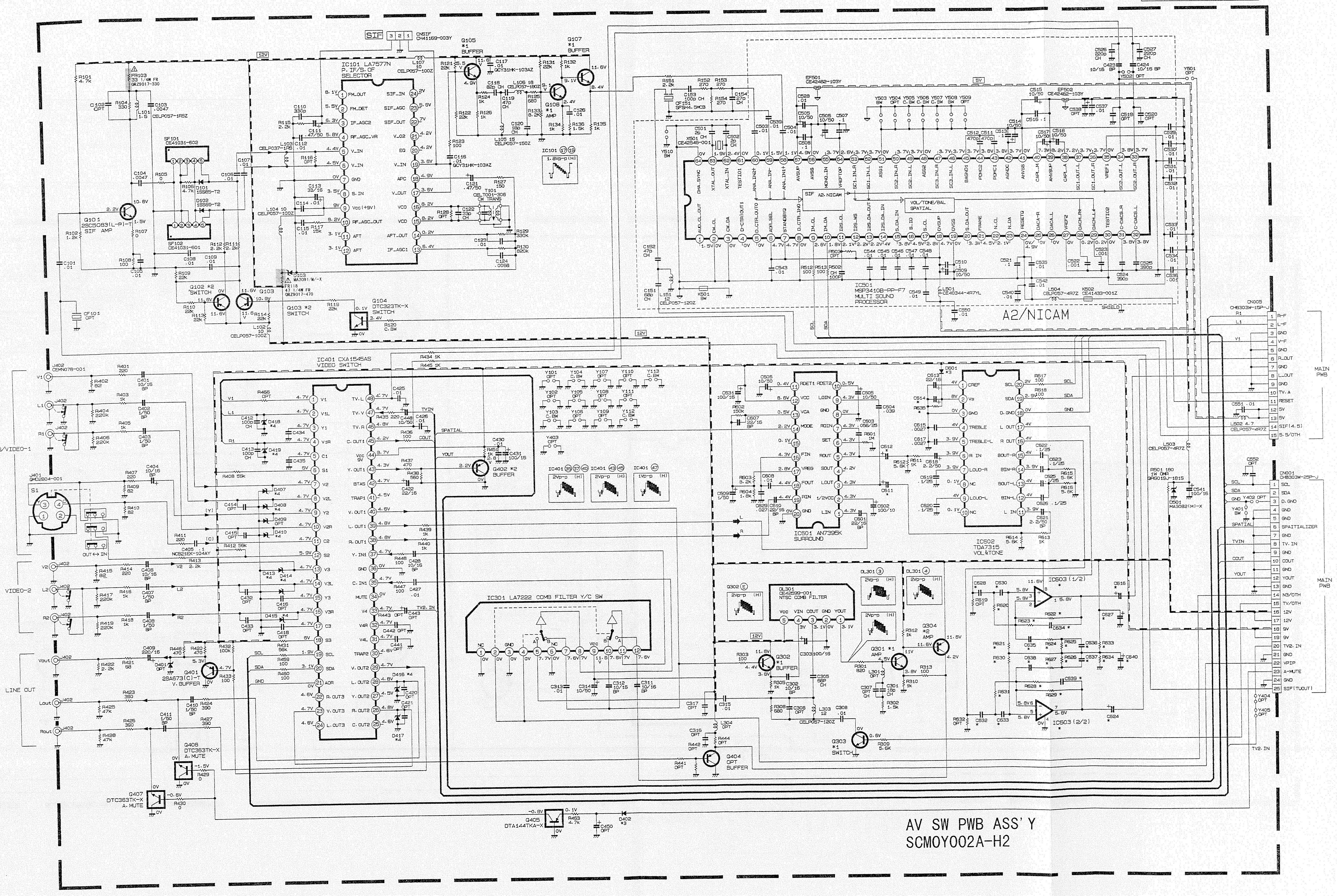
*	SCM-1013A-H2	SCM-1014A-H2	*	SCM-1013A-H2	SCM-1014A-H2
CN0C1	CH41170-006	CH41170-006	X801	CE41257-001Z	OPT
CNDEG	CHC501T-02N-J	CHC501T-02N-J	IC801	CF72306	OPT
CN00C	OPT	OPT	IC802	CF70211	OPT
Q151	*1	*1	Q801	*1	OPT
R151	10K	10K	Q802	*1	OPT
R152	10K	10K	K801	CE41433-001Z	OPT
R153	1K	1K	K802	CE41433-001Z	OPT
R154	BW	BW	L803	BW	OPT
C151	.01	.01	R801	470	OPT
C207	100/16	100/16	R802	3.9K	OPT
C208	220/16	220/16	R803	560	OPT
R319	33K	BW	R804	10K	OPT
C313	1/50	.01 MY	R805	1K	OPT
C314	1/50	.01 MY	R806	1.5K	OPT
C315	1/50	.01 MY	R807	33K	OPT
C317	470 5%	OPT	R808	1.8K	OPT
Y305	OPT	BW	R809	180	BW
R433	6.8 1/2W	6.8 1/2W	R810	1.8K	OPT
R444	220 1/2W	220 1/2W	R811	180	BW
R445	820 1/2W	820 1/2W	R812	1.8K	OPT
T522 ⚠	QQH0022-001	QQH0022-001	R813	180	BW
L522	CE42104-001	CE42104-001	R814	1.2K	OPT
L551	QQLZ018-220	QQLZ018-220	R815	560	OPT
R524	QRG029J-332	QRG029J-332	R816	1.2K	OPT
R525	QRG029J-332	QRG029J-332	R817	1.2K	OPT
C524 ⚠	QFZ0152-8601	QFZ0152-8601	C801	47/16	OPT
C525	OPT	OPT	C802	330P 5%	OPT
C527 ⚠	QFZ0151-474	QFZ0151-474	C803	.01	OPT
R735	15K	15K	C804	270P 5%	OPT
R757	1K	OPT	C805	15p CH	OPT
D928	OPT	OPT	C806	15p CH	OPT
D942	RU3YX-LFC4	RU3YX-LFC4	C807	100/10	OPT
R903	OPT	OPT	C808	.001	OPT
C941	QCZ0325-561	QCZ0325-561	C810	100/10	OPT
C925	.0018MY	.0018MY	C811	.01	OPT
C974	47/25	47/25	C812	.1 MY	OPT
C977	QETN1CM-108Z	QETN1CM-108Z	C813	.01	OPT
			C814	22/16	OPT
			C815	.1 MY	OPT
			C816	.01	OPT
			C817	.01 MY	OPT
			C818	.01	OPT

*1 2SC1740S/QR/-T
*2 2SA933AS/QR/-T
*3 1SS133-T2
*4 MTXJ10A-T2
BW IM-BW

AV SW PWB CIRCUIT DIAGRAM

NOTE

*1	: NPN Tr	2SC2412K/QR/-X
*2	: PNP Tr	2SA1037K/QR/-X
*3	: SI.DIODE	1SS353-X
*4	: ZENER DIODE	MA3100/M/-X
OPT	: OPTION	
BW	: BUS WIRE	


SIF
IC101 LA7577N
P.IF/S.OF SELECTOR
Q101 2SC5083(L-P)-T
SIF AMP
Q102 *2 SWITCH
Q103 *2 SWITCH
Q104 DTC323TK-X SWITCH
Q105 *1 BUFFER
Q106 *1 AMP
Q107 *1 BUFFER
IC501 MSP3410B-PP-F7
MULTI SOUND PROCESSOR
A2/NICAM
CN005
CN001
MAIN PWB
S/VIDEO-1
VIDEO-2
LINE OUT
IC401 CXA1545AS
VIDEO SWITCH
Q402 *2 BUFFER
IC501 AN7395K
SURROUND
IC502 TDA7315
VOL&TONE
IC503(1/2)
IC503(2/2)
IC301 LA7222 COMB FILTER Y/C SW
DL301
NTSC COMB FILTER
Q301 *1 AMP
Q302 *1 BUFFER
Q303 *1 SWITCH
Q304 *2 AMP
Q401 2SA673(C)-T
V.BUFFER
Q403 DTC363TK-X
A.MUTE
Q404 OPT BUFFER
Q405 DTA144TKA-X
Q407 DTC363TK-X
A.MUTE
AV SW PWB ASS'Y
SCM0Y002A-H2

REFFERENCE LIST (*PARTS)

	SCM0Y 002A-H2
C611	10/50
C612	10/50
C616	10/50
C624	10/50
C627	OPT
C628	C.BW
C630	OPT
C632	C.BW
C633	OPT
C634	OPT
C635	OPT
C636	OPT
C637	OPT
C638	OPT
C639	OPT
C640	OPT
R620	C.BW
R621	OPT
R622	C.BW
R623	OPT
R624	OPT
R625	OPT
R626	OPT
R627	OPT
R628	OPT
R629	C.BW
R630	OPT
R631	C.BW
R633	OPT
R634	OPT
IC603	OPT
C614	470/10
R635	2.7k

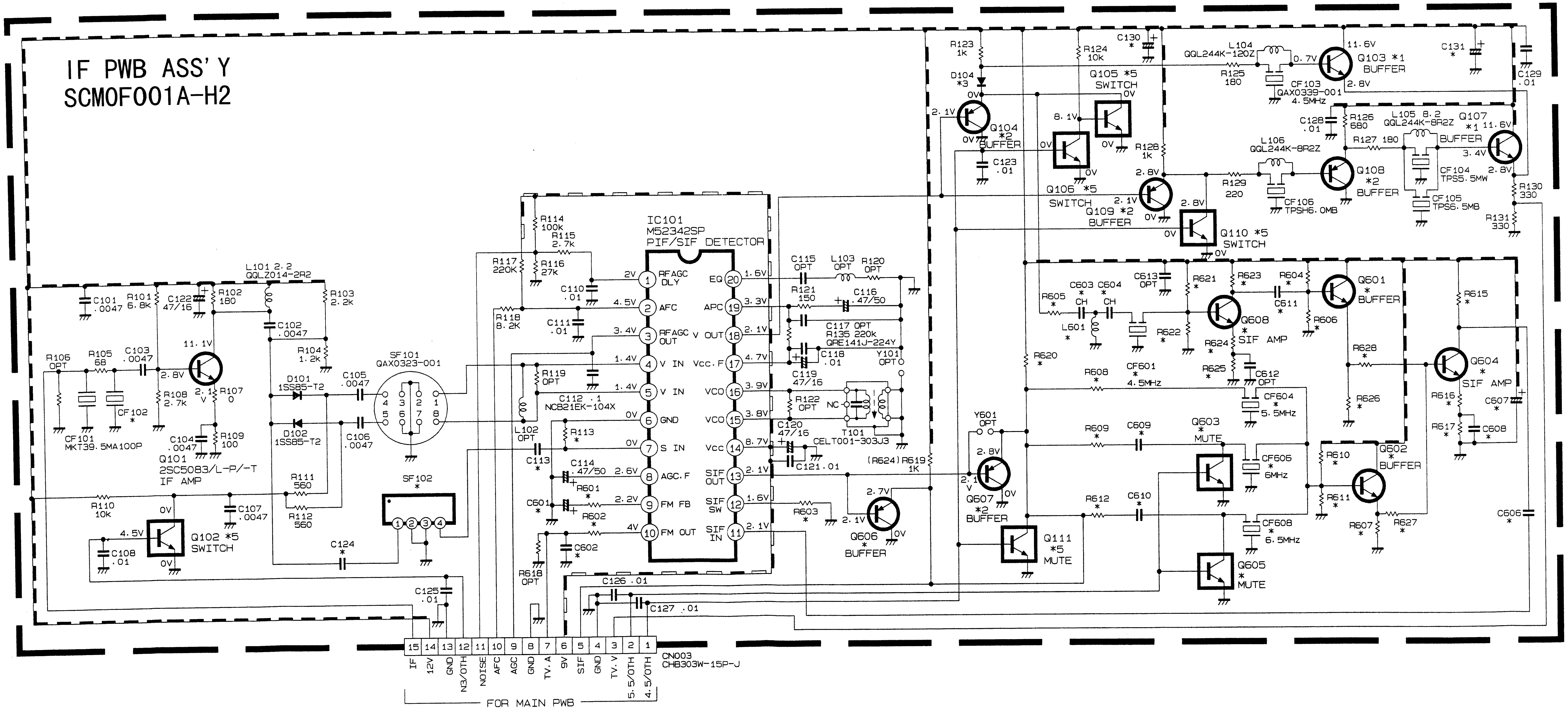
IF PWB CIRCUIT DIAGRAM

REFFERENCE LIST (*PARTS)

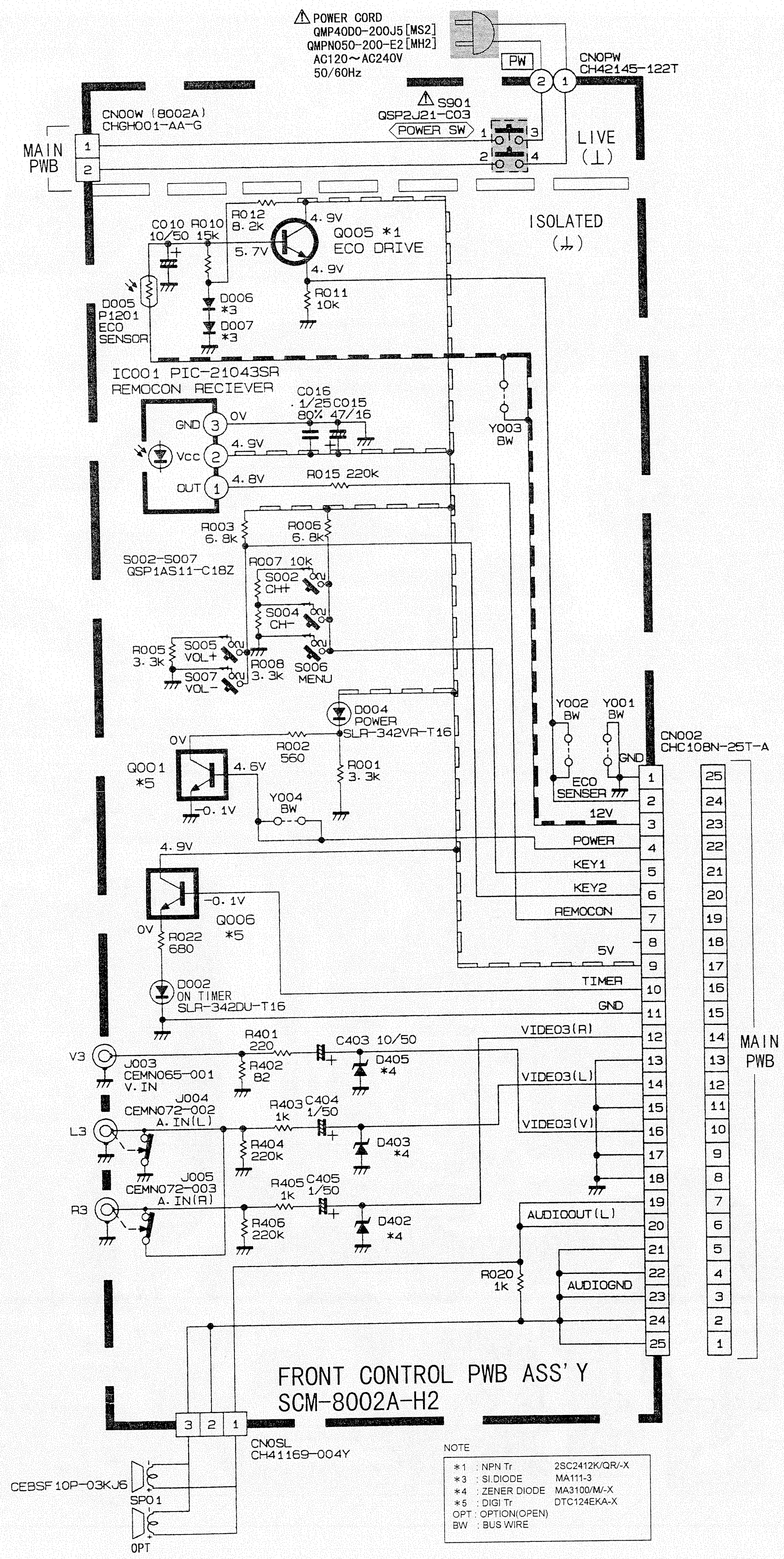
	SCM 0F001A-H2		SCM 0F001A-H2		SCM 0F001A-H2		SCM 0F001A-H2
C113	OPT	CF601	OPT	R601	OPT	R621	OPT
C124	OPT	CF604	OPT	R602	OPT	R622	OPT
CF102	MKT30.9 MA100P	CF606	OPT	R603	OPT	R623	OPT
Q111	OPT	CF608	OPT	R604	OPT	R624	OPT
R113	0	L601	OPT	R605	OPT	R625	OPT
SF102	OPT	Q601	OPT	R606	OPT	R626	OPT
C601	OPT	Q602	OPT	R607	OPT	R627	OPT
C602	OPT	Q603	OPT	R608	OPT	R628	OPT
C603	OPT	Q604	OPT	R609	OPT	C130	OPT
C604	OPT	Q605	OPT	R610	OPT	C131	OPT
C606	OPT	Q606	*2	R611	OPT		
C607	OPT	Q608	OPT	R612	OPT		
C608	OPT			R615	OPT		
C609	OPT			R616	OPT		
C610	OPT			R617	OPT		
C611	OPT			R619	1k		
C612	OPT			R620	OPT		

NOTE

*1	: NPN Tr	2SC2412K/QR/-X
*2	: PNP Tr	2SA1037K/QR/-X
*3	: SI. DIODE	MA111-X
*5	: DIGI Tr	DTC124EKA-X
OPT	: OPTION(OPEN)	
BW	: BUS WIRE	


IF PWB ASS'Y
SCM0F001A-H2
IC101
M52342SP
PIF/SIF DETECTOR
1 RFAGC DLY
2 AFC
3 RFAGC OUT
4 V IN
5 V IN
6 GND
7 S IN
8 AGC.F
9 FM FB
10 FM OUT
11 SIF IN
12 SIF SW
13 SIF OUT
14 Vcc
15 VCO
16 VCO
17 Vcc.F
18 V OUT
19 APC
20 EQ
Q101
2SC5083/L-P/-T
IF AMP
Q102 *5
SWITCH
Q103 *1
BUFFER
Q104 *2
BUFFER
Q105 *5
SWITCH
Q106 *5
SWITCH
Q107 *1
BUFFER
Q108 *2
BUFFER
Q109 *2
BUFFER
Q110 *5
SWITCH
Q111 *5
MUTE
Q601 * BUFFER
Q602 * BUFFER
Q603 * MUTE
Q604 * SIF AMP
Q605 * MUTE
Q606 * BUFFER
Q607 *2 BUFFER
Q608 * SIF AMP
SF101
QAX0323-001
SF102 *
L101 2.2
QQLZ014-2R2
L104
QQL244K-120Z
L105 8.2
QQL244K-8R2Z
L106
QQL244K-8R2Z
CF101
MKT39.5MA100P
CF102 *
CF103
QAX0339-001
4.5MHz
CF104
TPS5.5MW
CF105
TPS6.5MB
CF106
TPSH6.0MB
CF601 * 4.5MHz
CF604 * 5.5MHz
CF606 * 6MHz
CF608 * 6.5MHz
T101
CELT001-303J3
Y101 OPT
Y601 OPT
D101
1SS85-T2
D102
1SS85-T2
D104 *3
C112 .1
NCB21EK-104X
C117 OPT
R135 220K
QRE141J-224Y
CN003
CHB303W-15P-J
15 IF
14 12V
13 GND
12 N3/OTH
11 NOISE
10 AFC
9 AGC
8 TV.A
7 9V
6 SIF
5 GND
4 TV.V
3 5.5/OTH
2 4.5/OTH
1
FOR MAIN PWB

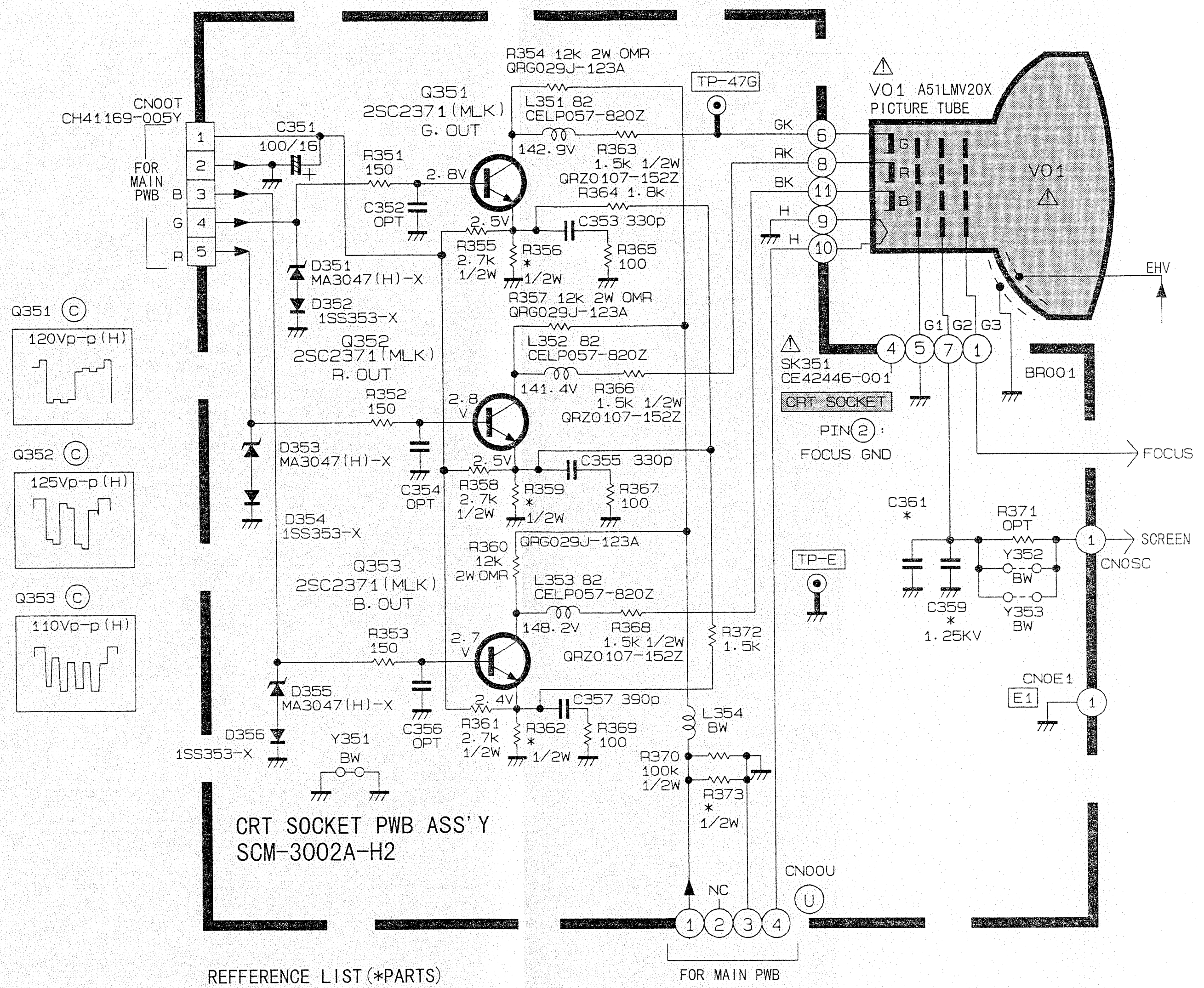
FRONT CONTROL PWB CIRCUIT DIAGRAM


⚠ POWER CORD
QMP40D0-200J5 [MS2]
QMPN050-200-E2 [MH2]
AC120～AC240V
50/60Hz
PW
CNOPW
CH42145-122T
⚠ S901
QSP2J21-C03
POWER SW
LIVE (⊥)
ISOLATED (⊥)
CN00W (8002A)
CHGH001-AA-G
MAIN PWB
R012 8.2k
C010 10/50
R010 15k
4.9V
5.7V
Q005 *1
ECO DRIVE
R011 10k
D006 *3
D007 *3
D005 P1201 ECO SENSOR
IC001 PIC-21043SR
REMOCON RECIEVER
GND 3
Vcc 2
OUT 1
0V
4.9V
4.8V
C016 1/25
C015 47/16
80%
R015 220k
Y003 BW
R003 6.8k
R006 6.8k
S002-S007
QSP1AS11-C18Z
R007 10k
S002 CH+
S004 CH-
R005 3.3k
S005 VOL+
S007 VOL-
R008 3.3k
S006 MENU
D004 POWER SLR-342VR-T16
R002 560
R001 3.3k
Q001 *5
4.6V
-0.1V
Y004 BW
Y002 BW
Y001 BW
ECO SENSER
GND
12V
POWER
KEY1
KEY2
REMOCON
5V
TIMER
GND
VIDEO3(R)
VIDEO3(L)
VIDEO3(V)
AUDIOOUT(L)
AUDIOGND
CN002
CHC10BN-25T-A
4.9V
Q006 *5
-0.1V
R022 680
D002 ON TIMER SLR-342DU-T16
V3
J003 CEMN065-001 V.IN
R401 220
R402 82
C403 10/50
D405 *4
L3
J004 CEMN072-002 A.IN(L)
R403 1k
C404 1/50
R404 220k
D403 *4
R3
J005 CEMN072-003 A.IN(R)
R405 1k
C405 1/50
R406 220k
D402 *4
R020 1k
MAIN PWB
FRONT CONTROL PWB ASS'Y
SCM-8002A-H2
CN0SL
CH41169-004Y
CEBSF10P-03KJ6
SP01
OPT

NOTE

*1 : NPN Tr 2SC2412K/QR/-X
*3 : SI.DIODE MA111-3
*4 : ZENER DIODE MA3100/M/-X
*5 : DIGI Tr DTC124EKA-X
OPT : OPTION(OPEN)
BW : BUS WIRE

CRT SOCKET PWB CIRCUIT DIAGRAM

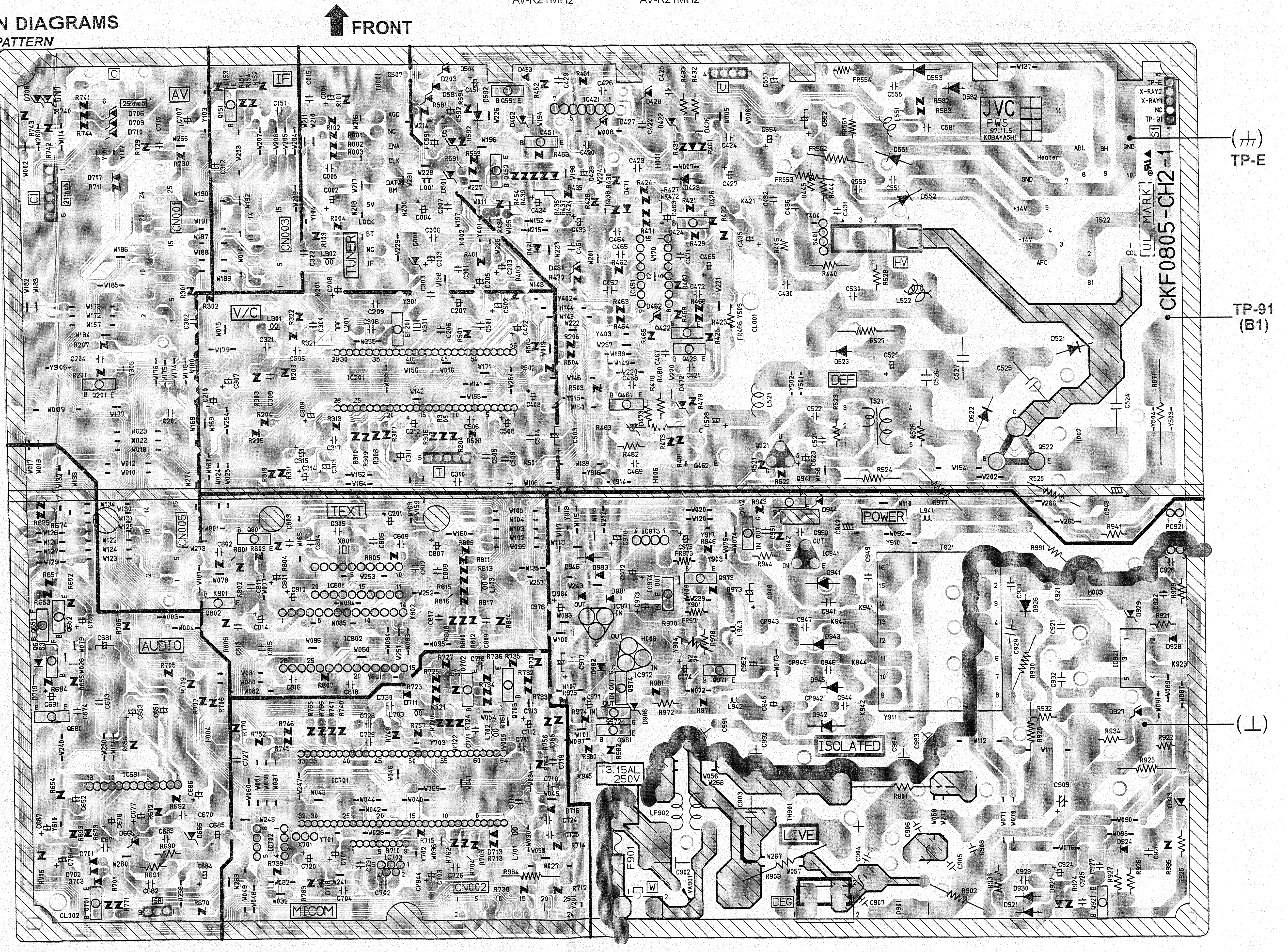

CN00T
CH41169-005Y
FOR MAIN PWB
B G R
C351 100/16
Q351 2SC2371(MLK) G. OUT
R351 150
C352 OPT
2.8V
R354 12k 2W OMR
QRG029J-123A
L351 82 CELP057-820Z
142.9V
R363 1.5k 1/2W
QRZ0107-152Z
R364 1.8k
2.5V
C353 330p
R355 2.7k 1/2W
R356 *1/2W
R365 100
D351 MA3047(H)-X
D352 1SS353-X
R357 12k 2W OMR
QRG029J-123A
Q352 2SC2371(MLK) R. OUT
R352 150
L352 82 CELP057-820Z
141.4V
R366 1.5k 1/2W
QRZ0107-152Z
D353 MA3047(H)-X
C354 OPT
C355 330p
R358 2.7k 1/2W
R359 *1/2W
R367 100
D354 1SS353-X
R360 12k 2W OMR
QRG029J-123A
Q353 2SC2371(MLK) B. OUT
R353 150
L353 82 CELP057-820Z
148.2V
R368 1.5k 1/2W
QRZ0107-152Z
R372 1.5k
2.4V
C357 390p
D355 MA3047(H)-X
C356 OPT
R361 2.7k 1/2W
R362 *1/2W
R369 100
D356 1SS353-X
Y351 BW
L354 BW
R370 100k 1/2W
R373 * 1/2W
Q351 120Vp-p(H)
Q352 125Vp-p(H)
Q353 110Vp-p(H)
TP-47G
TP-E
GK RK BK H
⚠ V01 A51LMV20X PICTURE TUBE
V01 ⚠
EHV
G1 G2 G3
⚠ SK351 CE42446-001
CRT SOCKET
PIN 2 : FOCUS GND
BR001
FOCUS
C361 *
R371 OPT
Y352 BW
C359 * 1.25KV
Y353 BW
SCREEN
CN0SC
CN0E1
E1
CRT SOCKET PWB ASS'Y
SCM-3002A-H2
NC
CN00U
FOR MAIN PWB

REFFERENCE LIST (*PARTS)

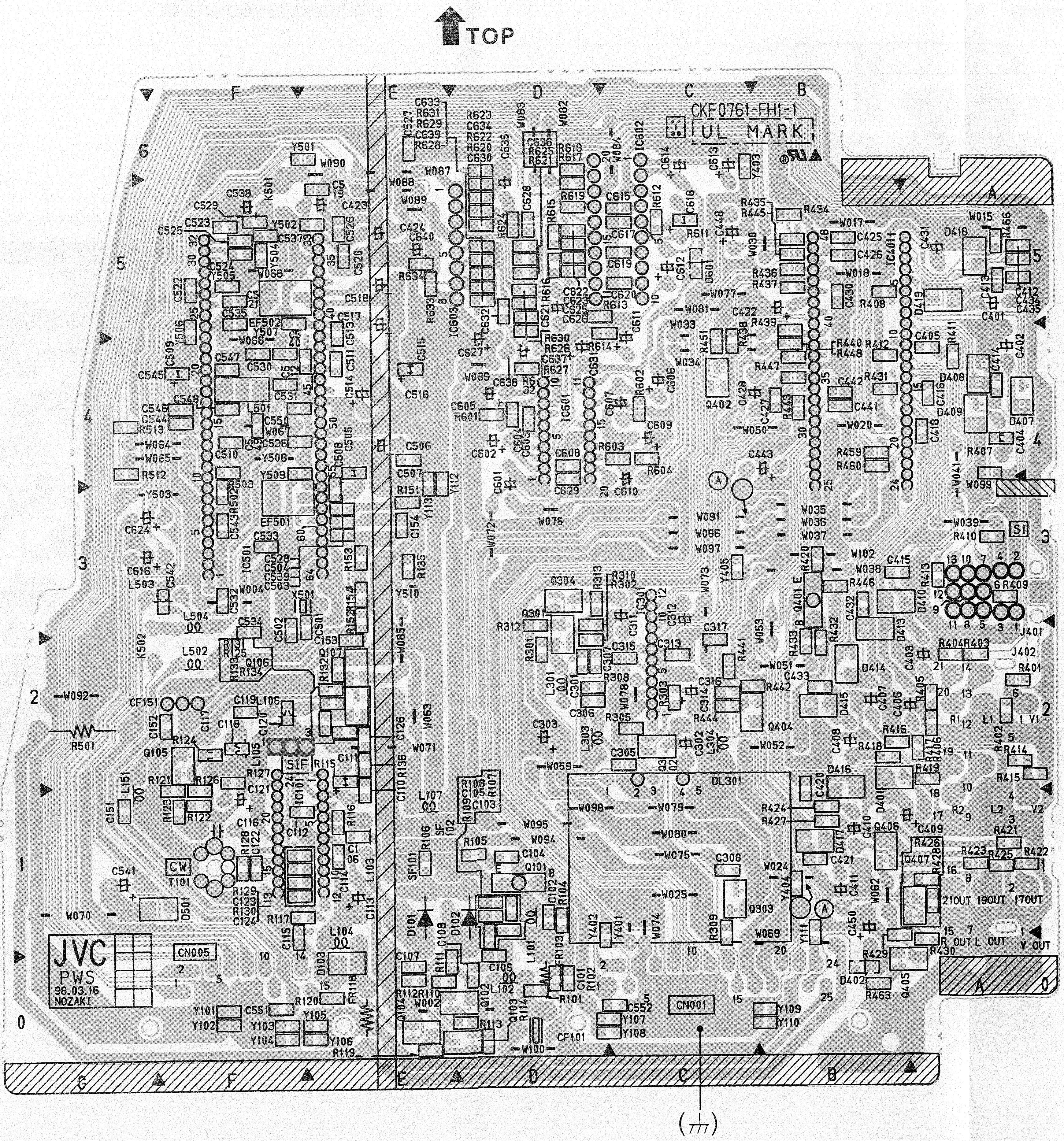
	SCM-3002A-H2
C359	QFZ0097-223M
C361	QFZ0097-223M
R356	330 1/2W
R359	330 1/2W
R362	330 1/2W
R373	100K 1/2W

PATTERN DIAGRAMS

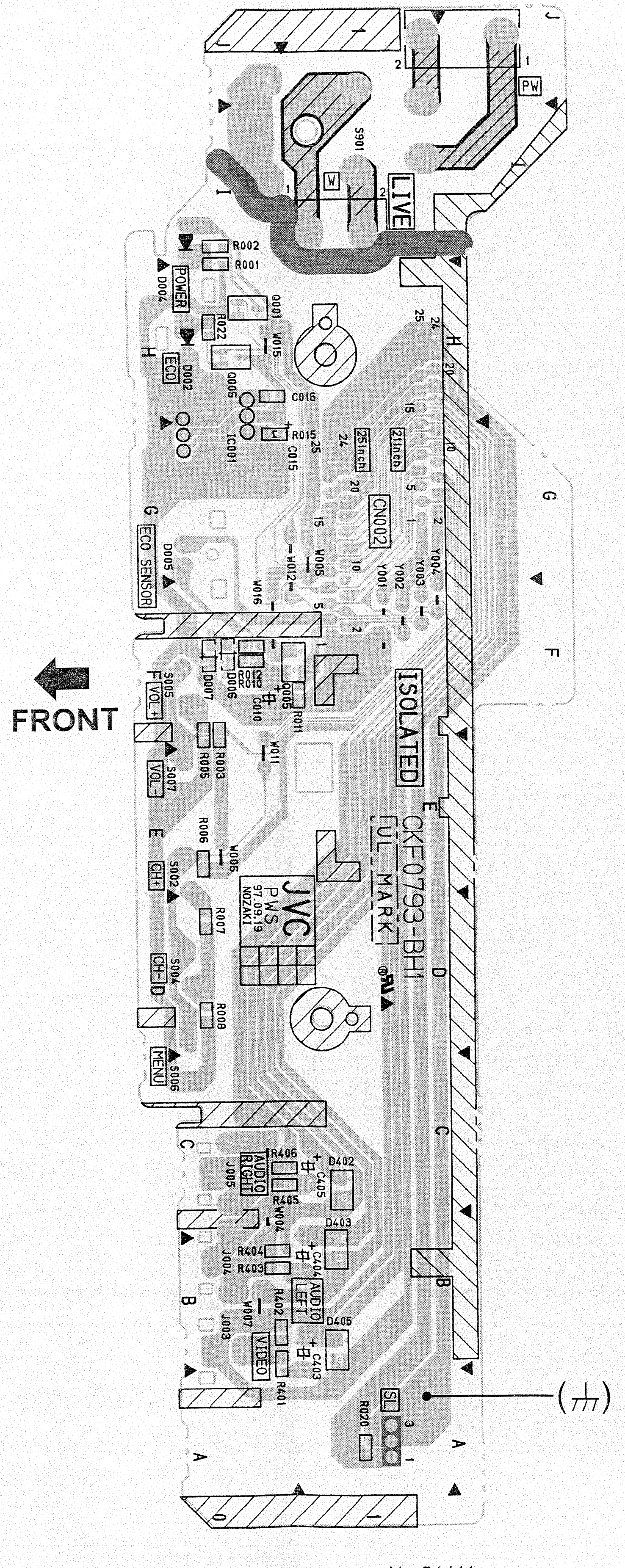
MAIN PWB PATTERN


FRONT
AV
IF
TUNER
V/C
TEXT
AUDIO
MICOM
CN001
CN002
CN003
CN005
DEF
HV
POWER
ISOLATED
LIVE
DEG
T3.15AL
250V
F901
JVC
PWS
97.11.5
KOBAYASHI
UL MARK
CKF0805-CH2-1
TP-E
X-RAY2
X-RAY1
NC
TP-91
(⏊)
TP-E
TP-91
(B1)
(⊥)
25inch
21inch

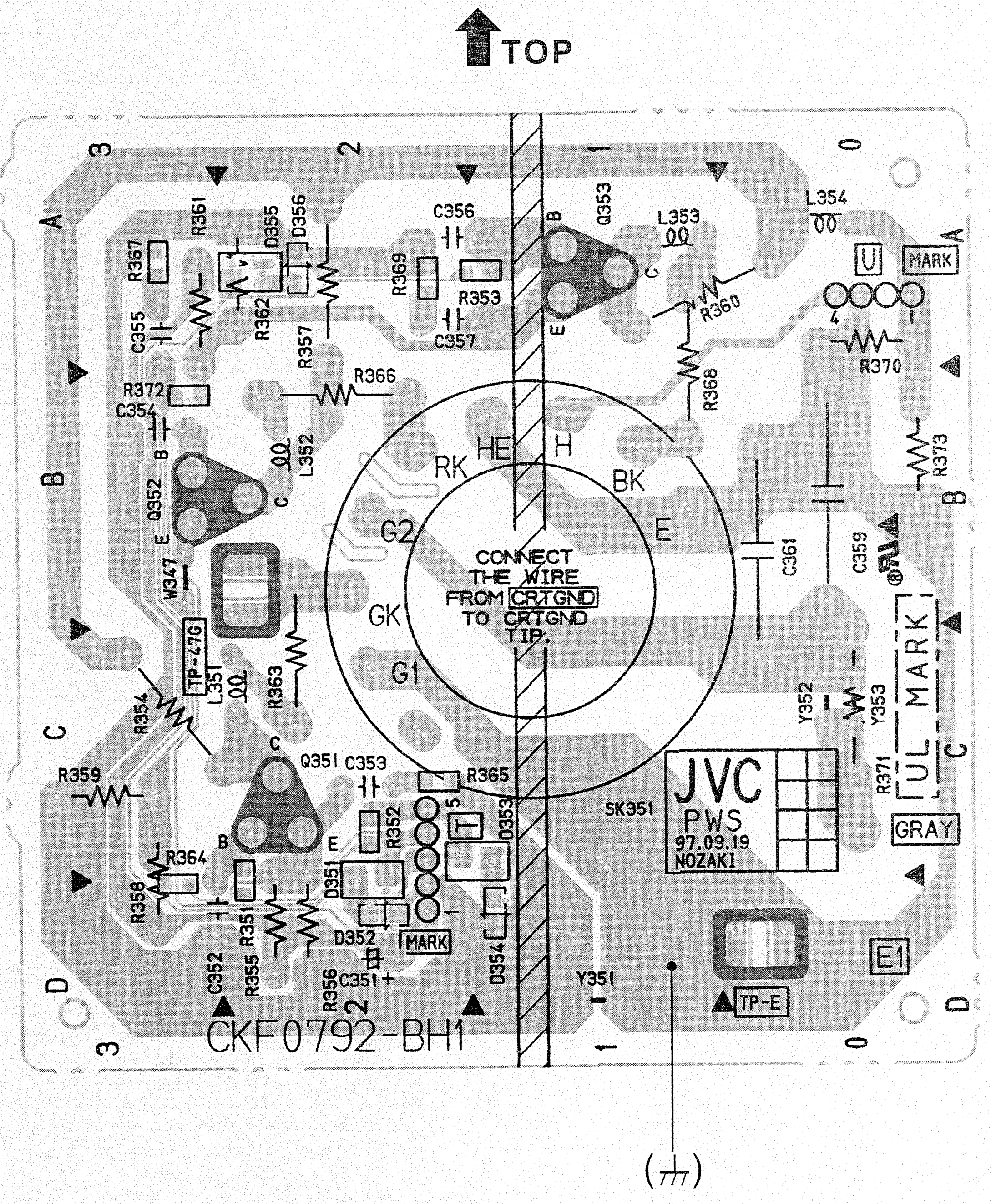
AV SW PWB PATTERN


TOP
CKF0761-FH1-1
UL MARK
JVC
PWS
98.03.16
NOZAKI
CN005
CN001
SIF
CW
DL301
S1
J401
J402
IC501
IC601
IC603
IC301
IC101
IC401
A
B
C
D
E
F
G
0
1
2
3
4
5
6
R OUT L OUT
V OUT
21OUT 19OUT 17OUT

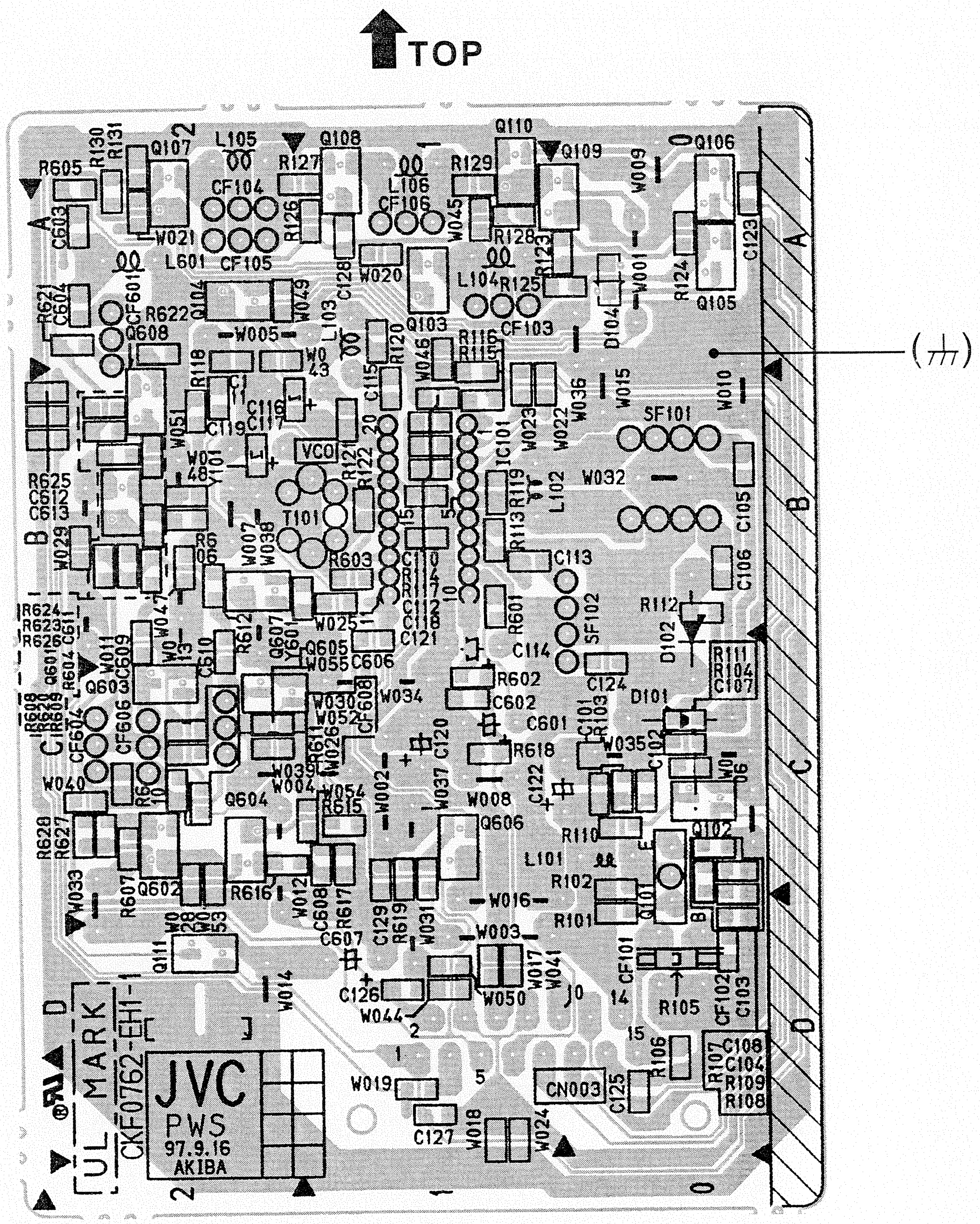
FRONT CONTROL PWB PATTERN


FRONT
S901
LIVE
PW
POWER
ECO
ECO SENSOR
D004
D002
D005
R002
R001
R022
Q001
W015
Q006
C016
R015
C015
IC001
25inch
21inch
CN002
W005
W012
W016
Y001
Y002
Y003
Y004
S005
VOL+
VOL-
S007
D006
D007
R012
R010
C010
Q005
R011
W011
R003
R005
ISOLATED
CKF0793-BH1
UL MARK
R006
W006
CH+
S002
JVC
PWS
97.09.19
NOZAKI
R007
CH-
S004
R008
MENU
S006
AUDIO RIGHT
R406
J005
C405
D402
R405
W004
D403
R404
R403
J004
C404
AUDIO LEFT
R402
W007
J003
D405
VIDEO
C403
R401
SL
R020
A
B
C
D
E
F
G
H
I
J
(⏚)

CRT SOCKET PWB PATTERN


TOP
R361
D355
D356
R367
R362
R357
C356
R369
R353
C357
Q353
L353
L354
R360
U
MARK
R370
C355
R372
C354
R366
R368
R373
Q352
L352
HE
H
RK
BK
G2
E
CONNECT THE WIRE FROM CRTGND TO CRTGND TIP.
GK
G1
W347
TP-47G
L351
R363
C361
C359
UL MARK
R354
Y352
Y353
R371
R359
Q351
C353
R365
SK351
JVC
PWS
97.09.19
NOZAKI
GRAY
R364
R352
D353
R358
R351
D351
D352
MARK
C352
R355
R356
C351
D354
Y351
TP-E
E1
CKF0792-BH1
A
B
C
D
0
1
2
3
(⏚)

IF PWB PATTERN


TOP
Q107
L105
Q108
Q110
Q109
Q106
R605
R130
R131
CF104
R127
R129
L106
CF106
W045
W009
C603
W021
L601
CF105
R126
C128
W020
R128
R123
W001
R124
C123
A
CF601
R621
C604
R622
Q104
W049
L103
Q103
L104
R125
CF103
D104
Q105
Q608
W005
R118
W0 43
C115
R120
W046
R116
R115
W036
W015
W010
C116
C117
C119
W051
W0 48
Y101
VCO
R121
R122
20
IC101
W023
W022
SF101
R625
C612
C613
T101
15
5
R119
L102
W032
R113
B
C105
W029
R6 06
W007
W038
R603
C110
R114
R117
C112
C118
C121
10
11
C113
C106
R624
R623
R626
C611
W047
R612
Q607
Y601
W025
R601
SF102
R112
D102
Q601
R604
W011
C609
W0 13
C610
Q605
W055
C606
C114
R111
R104
C107
R608
R620
R609
Q603
C608
W030
W052
W034
R602
C124
D101
C
CF604
CF606
R611
W026
C602
C601
C101
R103
W035
C102
C120
R618
W0 06
W040
R6 10
W039
W004
W054
R615
W002
W037
C122
W008
Q604
Q606
R110
R628
R627
L101
Q102
Q101
R102
W033
R607
Q602
R616
W012
R617
C608
C129
R619
W031
W016
R101
W0 28
W0 53
C607
W003
Q111
W014
C126
W044
W050
W017
W041
J0
14
CF101
R105
CF102
C103
D
UL MARK
CKF0762-EH1-1
JVC
PWS
97.9.16
AKIBA
2
1
W019
5
15
R106
R107
C108
C104
R109
R108
CN003
C125
C127
W018
W024
0